EXTENSION

THE FARM AND FARM HOME MAGAZINE

JANUARY, 1961

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EXTENSION

THE FARM AND FARM HOME MAGAZINE

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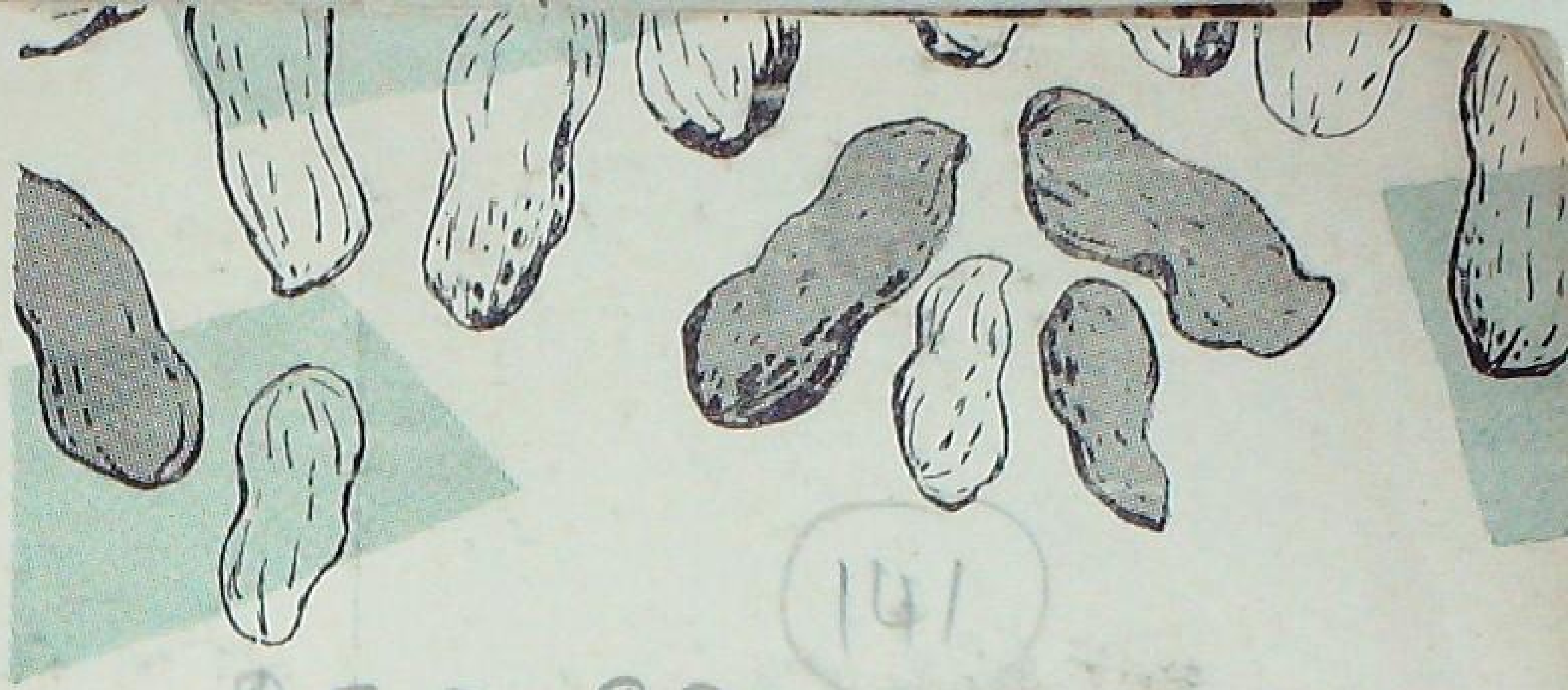

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It's Good to Grow Groundnut in Rice Fallows

THERE are three good reasons why you should grow groundnut in rice fallows during winter, as the Madras farmers do.

You will get an oilseed which has good demand, without putting any extra land under the crop.

You will get ready cash from the crop you grow.

Groundnut, being a legume, not only raises the fertility of the soil but also gives a good green manure for the rice crop that you will raise later.

With these three good reasons, Madras farmers grow groundnut. They use a bunchy type, one that takes $3\frac{1}{2}$ months from sowing to harvest, for the purpose.

To encourage them grow the bunchy type groundnut, the Experimental Station at Tindivanam in Madras State took up this research:

What should be the best spacing farmers could give to the variety?

What should be the best seed-rate they should take up?

Different spacings were tried, and it was found that if farmers were to give a spacing of six inches by nine inches, they would get the maximum profits.

To give this spacing, farmers would need 90 pounds of picked kernels for sowing an acre.

It certainly is good to grow groundnut in rice fallows, and in summer as a garden crop.

be fair to your RATOON CROP

The ratoon cane you have been neglecting can, with attention, give you as good or even better profits than your plant crop

TO many, the sugarcane ratoon crop is a crop that gives something for nothing, and, as such, they feel that they need not give it any attention.

To others, the ratoon crop is as good as the plant crop. They give it fertilizers, intercultivation and irrigation. They get a rich crop in return, bringing them a handsome profit. Some of these farmers have sometimes raised ratoons which have yielded higher than plant canes!

Shri Raoji Balwant Khade of Sangrul village in Kolhapur District, recently raised a 83½-ton ratoon crop, from which he got 271 Bombay maunds of *gur*. The crop gave him a net profit of Rs. 1,305 an acre!

He got this yield and profit because he was fair to his ratoon.

Soon after he harvested the plant crop, he cut open fresh ridges. After a month he gave an irrigation. He applied 20 cartloads of cattle manure. Then he gave the ratoon 224 pounds of ammonium sulphate and 14 bags of groundnut cake (in the middle of January). He gave 112 pounds of ammonium sulphate, once in March and then again in early May.

He gave an interculture to the crop once every fortnight and kept the field free of weeds.

Sugarcane experts say that other farmers, too, should follow Khade's example, and get the best from their ratoon crop. For this, they suggest :

1. To give the same attention to the ratoon crop as is given to the plant crop, in interculturing, irrigating and manuring.
2. Burning of trash and other wastes of the previous crop and using it as manure for the ratoon.
3. Giving the field a good irrigation so that the ratoon may sprout quickly.
4. Giving enough cattle manure or compost to the ratoon.
5. Protecting the crop against white ants by using BHC or 'Endrin.'
6. Growing *moong* or *lobia* in-between the cane rows, and burying it in as soon as it is ready.
7. Keeping an eye on pests and diseases and taking up their control measures.
8. Applying fertilizers before the monsoon starts.
9. Earthing up the crop before the rains start.

Be fair to your ratoon cane. Thereby make it give you the best returns.

Why tomatoes get pitted and cracked

By A.K. DUTT

YOU should get nice, healthy and full-formed tomatoes from your plants if you have planned to make good profits from the crop.

But when you get tomatoes pitted and cracked, with corky areas on the skin, and ripening unevenly, you know you will get nothing very much from such fruits.

There is a reason for the crop producing such 'no-good' tomatoes. The soil in which they are grown does not feed them with enough boron !

The lack of boron, the 'minor' food-element of plants, is seen not only in the fruits, but also in other parts of the plant.

Boron-hungry tomato plants show short, thick and stiff stems. The growing points may die, producing side branches which make the plants look bushy. The leaves of such plants show heavy tints of yellow, brown or purple.

When you see these signs, feed the plants with boron. You can do this by adding borax to the soil, or spraying it on the plants.

How much of it, depends upon the soil, the amount of organic matter it contains, the season, and also upon how much of boron is found in borax.

You may need to give 8 to 12 pounds of borax per acre, and a higher dose for heavy-textured soils.

So that you may spread this small amount well all over the field, mix it with manures or fertilizers, and work it into the soil before you plant tomatoes.

When you use borax as a spray, make a 0.3 to 0.4 per cent solution, to be on the safer side. To get this solution, dissolve 2 to 2½ ounces of borax in four gallons of water.

You will need 50 to 60 gallons of the solution to spray an acre of tomatoes.

Give the first spray to the tomato seedlings in the nursery, a week before you remove them for transplanting, or on the plants in the field three to four weeks after you have transplanted them.

Give more sprays depending upon how the crop reacts.

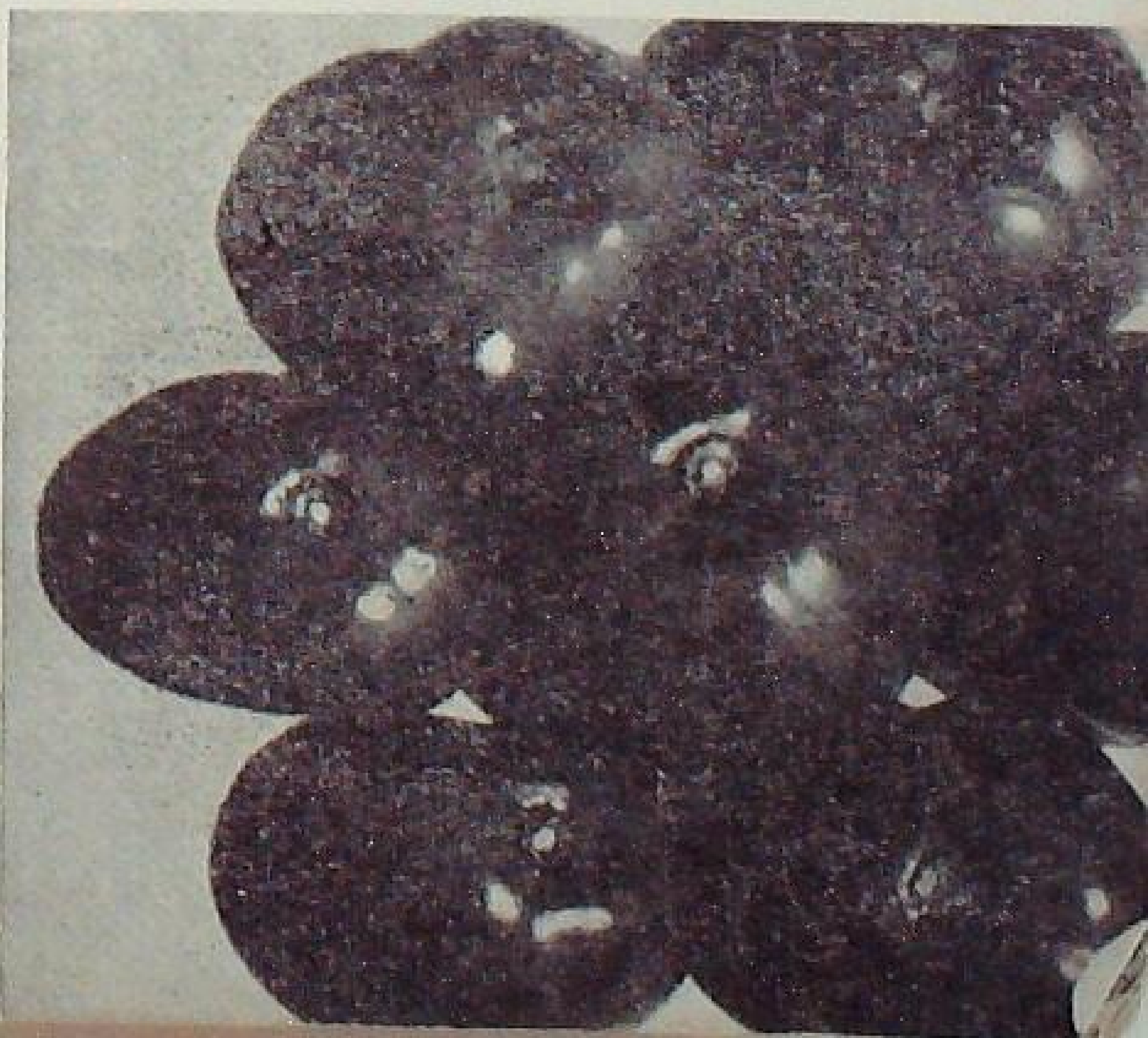
It is better to apply borax as a spray on plants than to apply it to the soil. You may need six to nine rupees worth of borax to spray an acre.

However, don't make spraying with borax a regular practice in your garden. Too much of boron in the soil is as bad as too little of it.

Apply borax in a small area, and the experience will tell you how much boron is needed, and how you should apply the same.

Also remember that your crop-yield goes down before you see the plants showing hunger signs for boron.

If your tomato plants don't get the boron they need, you will get such pitted and cracked fruits (left) *instead of good ones* (right)



You don't need to be a breeder to keep poultry for meat. In this case, good management is the secret of success.

Keeping Poultry Birds for Meat

By S. G. IYER

POULTRY meat is tasty and is easily digested. Hence it is popular with people.

But, there is no poultry meat production business in our country as in Western countries. This is because our people buy birds by number and not by weight. They also prefer a smaller bird, just enough for a meal.

It will pay you to raise poultry birds for the table.

Fifty per cent of the chicks in your flock will turn out to be cockerels. You will need only a few for breeding purposes. If you feed well those you don't need for breeding, till they are 12 to 16 weeks old, they will fetch a good price when you sell them.

Similarly, you will like to sell away the poor layers from the flock. It is not worth keeping them with the high feeding costs you have to meet.

If you want to specialize in meat production, then with a little trouble you can make the job really pay.

BREEDING

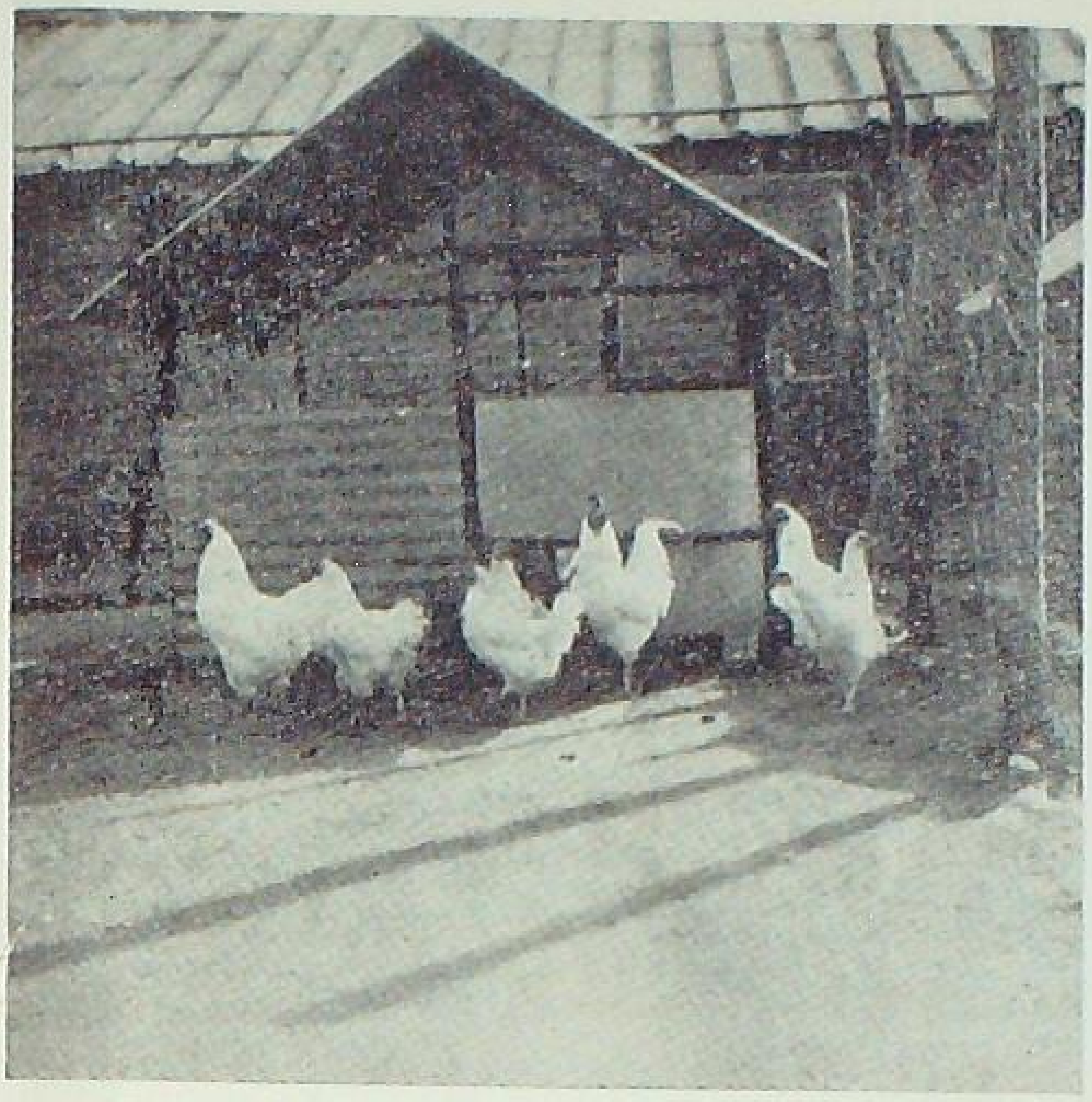
People who buy chicken prefer birds with well-fleshed breasts over the keel or breast-bone, giving a high proportion of meat to bone.

If you produce such meat-type birds, people will readily buy them.

The breed or variety you keep for meat should :

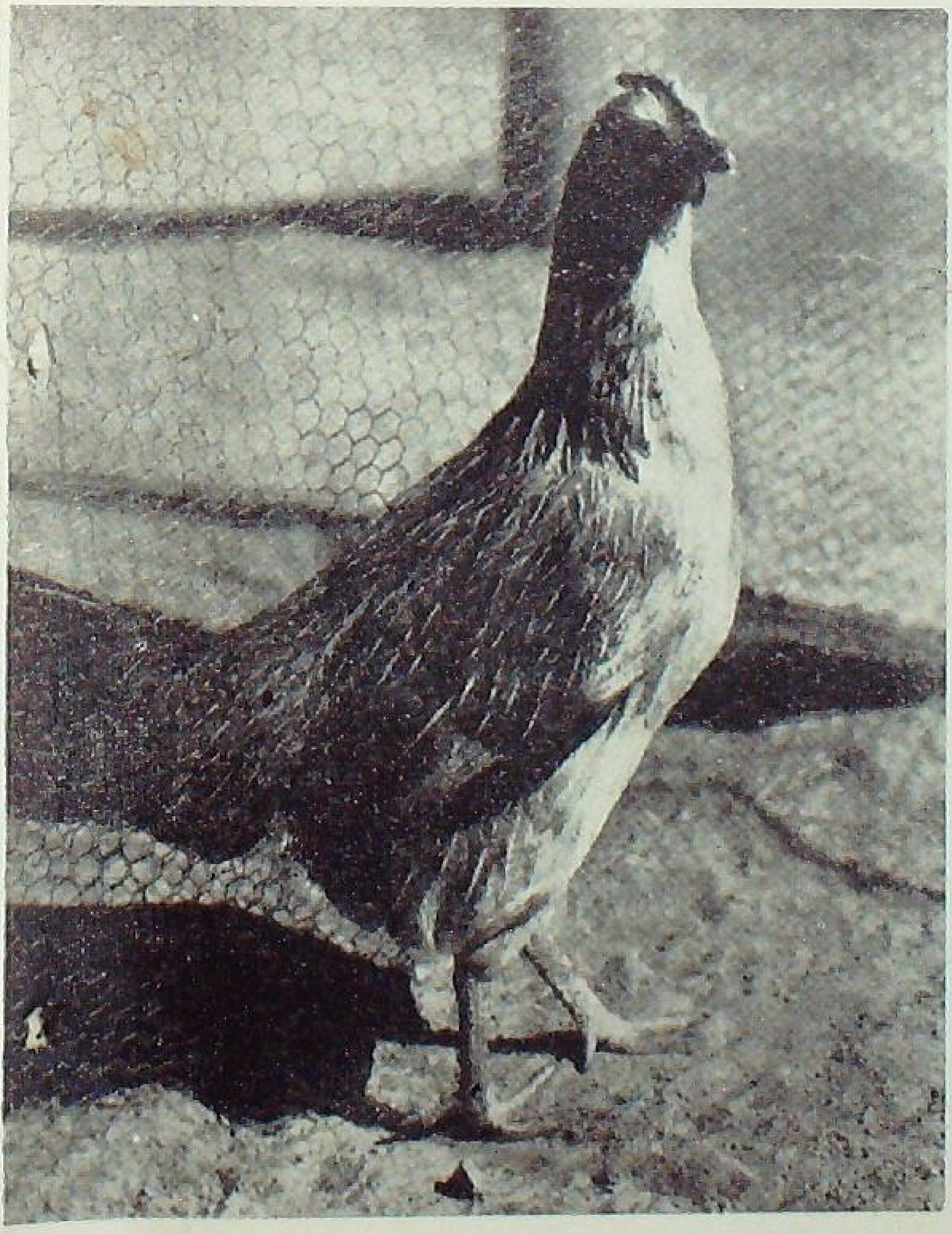
grow fast,
put on good flesh,
be large in size,
be heavy in weight,
have good fertility and
lay fairly well.

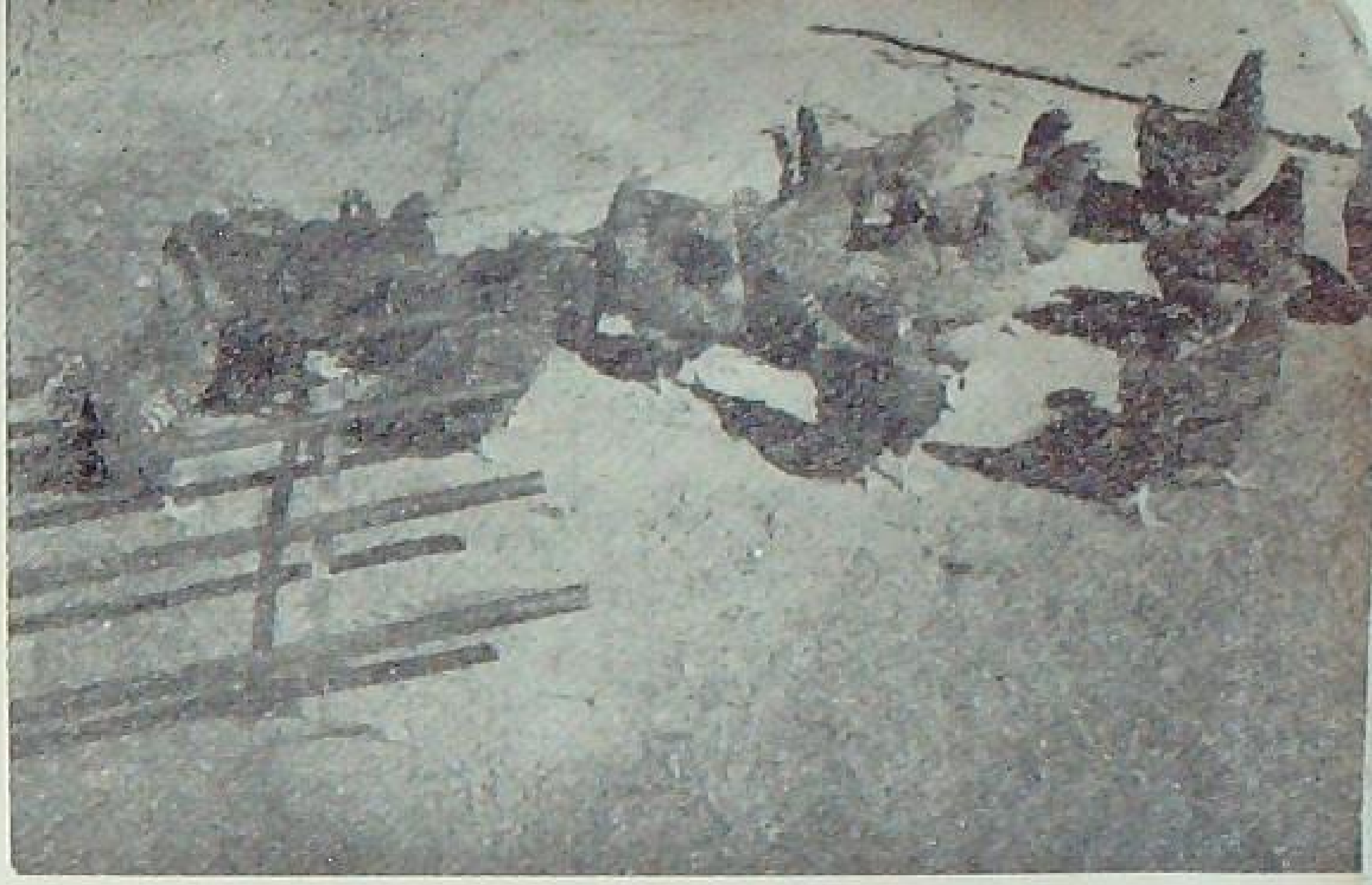
You can select your birds from these meat-breeds : Cornish, Plymouth Rocks,



Birds of the Cornish breed

A desi *bird*

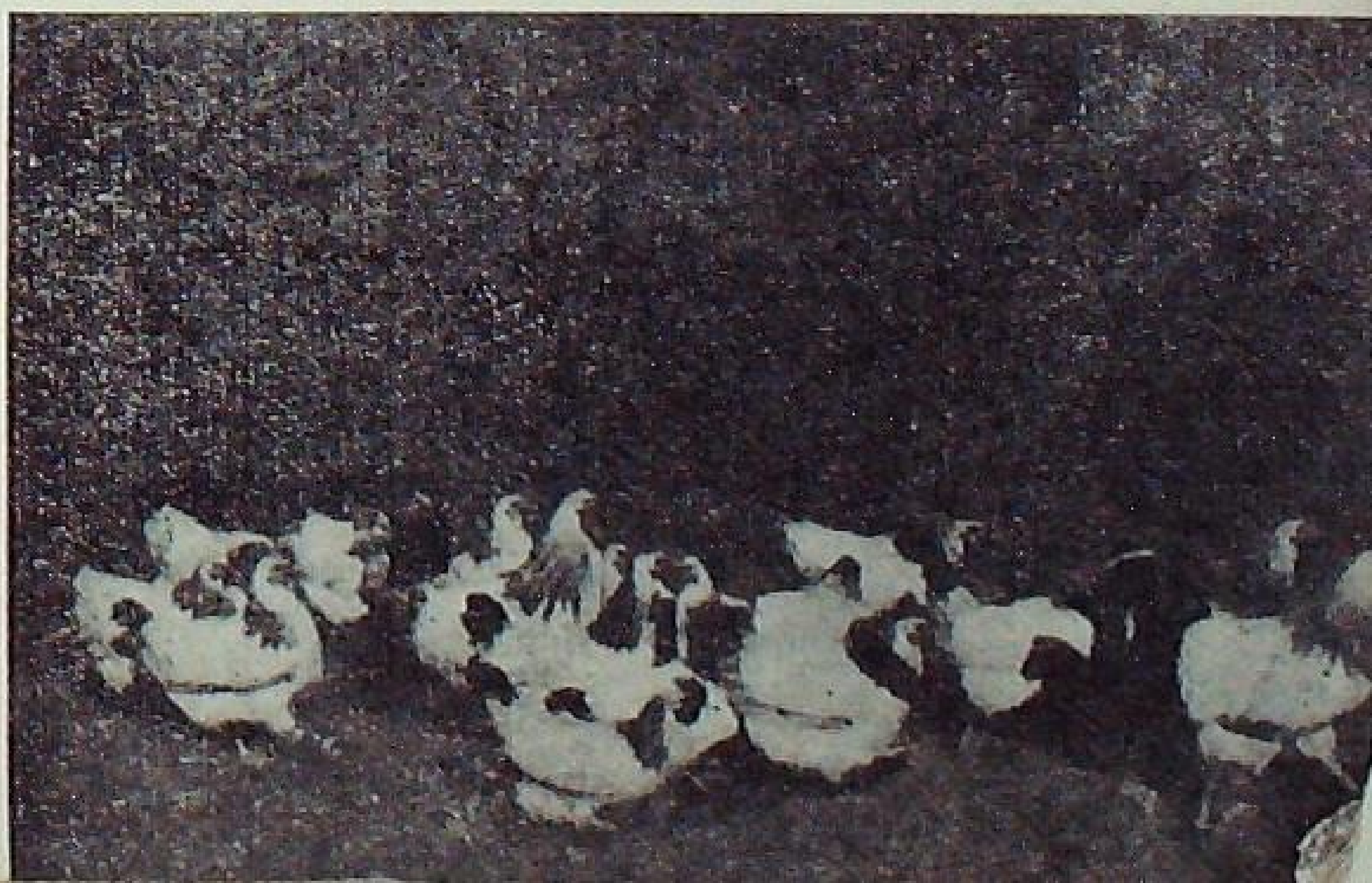




These are Barred Plymouth Rocks

A flock of New Hampshire birds

This one is a group of Light Sussex birds



Cochins, Brahma, Langshan, Sussex, Aseel and Chittagong. (The last two are Indian breeds. Some of our poultry farms have developed the Cornish and New Hampshire breeds for meat.)

Aseel is heavy when mature. But it is slow-growing and hence becomes costly to raise for meat. It is a poor layer too. But crossed with Rhode Island Red, it becomes a fairly good meat-bird.

A light breed like Leghorn grows fast up to a certain stage. When mature, it has very little breast meat, and hence makes a poor-table bird.

The *desi* is a small and compact bird. But it is a slow-grower and a poor layer.

You can get Cornish and New Hampshire chickens from your State Poultry Farm for fattening and selling them for table.

MANAGEMENT

Management is very important in raising poultry for meat. A good management is more important than breeding.

FEEDING

Birds increase in weight as they grow. What weight you can expect at what age depends upon breed, climate, feeding and management and such other factors.

The following is a rough guide:

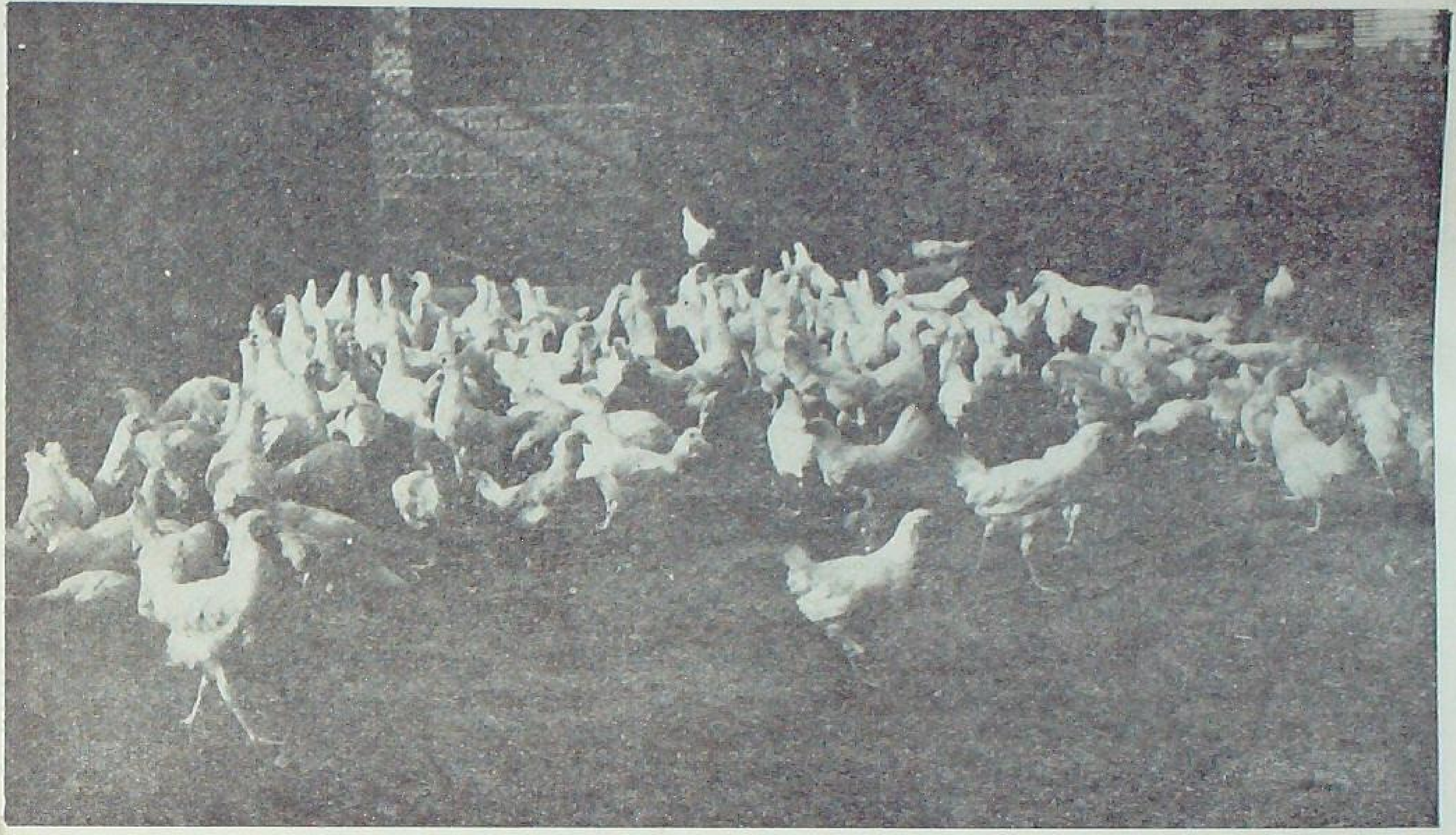
Age in weeks	*Weight in pounds* *male*	*female*
8	1.25	1.13
12	2.20	2.00
14	3.50	3.25
18	4.00	3.50

And this is a rough guide showing how much of feed a bird will consume to put on every pound of weight.

Weight	*Feed in pounds*
First pound	3.51
Second pound	4.51
Third pound	6.10
Fourth pound	10.10

This means you have to give about 24 pounds of feed to your bird to help it produce four pounds of weight.

Though a heavy bird, Aseel (left) is a slow grower. But when crossed with Rhode Island Red, it makes a good meat-bird



A flock of White Leghorns

In villages, where birds are left to find their own food, except during the early stages, feeding does not form a costly item.

But where you are keeping poultry on an intensive scale, the feed alone forms 60 per cent of your total cost. If you can reduce the cost without reducing the efficiency, you will make bigger profits.

To do this, prepare your poultry ration according to the locally available food-stuffs, and also be guided by the cost of each item.

The feed you give your birds should contain: carbohydrates, proteins, fats, minerals and vitamins in addition to water.

The feed should also be well-balanced, digestible, fresh and clean.

Carbohydrates—These are found in grains and grain by-products. They supply the heat and energy birds need. Don't feed just one type of grain to your birds. Make it a mixture of two or more types.

Select from these: maize, barley, oats, *bajra*, paddy, *jowar*, *cheena*, gram, peas, potato (if cheap), wheat-bran and rice-bran.

Proteins—Include proteins of the right kind and quality and in the required quantity.

Select from milk products—such as curd, butter-milk and skimmed-milk—meat-offals, fish-meal, oil-cakes like groundnut-cake, and blood-meal.

Grains, grain by-products and proteins together will give the birds some minerals. But to get all the minerals, they need to get bonemeal, limestone or oyster shell and common salt.

Poultry birds also need vitamins D3 and A. Birds get vitamin D from the sun. But when kept indoors, give the birds Shark Liver Oil D3 so that they may get the vitamin.

Feed them with green feeds such as fresh tender grass, radish and carrot-tops, lucerne, onions or small quantities of cabbage so that they may get vitamin A. Without this vitamin, birds easily catch cold and other diseases of the wind-pipe.

THE DAILY RATION

Feed your birds daily with a good mash-mixture, some food of animal origin, greens, and don't forget to give them clean water.

An all-metal poultry house

Prepare your mash-mixture as given below:

	Parts by weight
Any two or three cereals, eg., yellow maize, *bajra*, *jowar*, barley, oats, *cheena*	35
Bran (Wheat or rice)	20
Groundnut oil-cake	35
Fish-meal	5
Ground limestone or oyster shell	3
Steamed bonemeal	1
Common salt	½ to 1
Manganese sulphate	10 gms. per 100 pounds of mixture

Make the feed available to the birds the whole day. Birds don't overeat.

Give this all mash-mixture at two ounces per chick per day up to its eighth week of age. Thereafter, increase the ration to four ounces per bird per day.

Give plenty of clean water to birds every day. Keep the water in shade. If you have skimmed-milk, give this instead of water to chicks up to six weeks. Thereafter, keep skimmed-milk and water, both in separate containers.

Feed greens from the seventh day of hatching.

For every 100 chicks, this will be the quantity of mash you have to prepare every week:

Age of chicks in weeks	*Quantity of mash in pounds*
1	10
2	20
3	30
4	40
5	50
6	60
7	70
8	80

HOUSING

Give a good house for your poultry birds.

An ideal poultry house or shed should have:

1. wire-netting on all sides
2. a cement-concrete floor
3. no crevices or cracks
4. a roof of asbestos or galvanized iron sheets

The rear of the house should face the direction of strong winds. The front should not face west or north.

The house should remain dry, and should allow easy cleaning and spraying for ticks, lice, fleas and mites.

Don't overcrowd birds in the houses.

You can easily put a hundred cockerels (8 to 24 weeks) in a house of 12 feet by 8½ feet by 4 feet. Provide a run for them with six-feet high wire-net fencing fixed on wooden poles or angle-iron bars.

You can also construct cheaper houses with locally available materials such as gunnies, twigs and straw.

Provide also the following equipment:

1. Roosts or perches
2. Feed-hoppers (troughs or earthen pots)
3. Water-fountains
4. Grit boxes

Cover the floor of the house with litter to keep it dry. You can use chaffed straw, saw-dust, wood-shaving or sand for the purpose. Change the litter once a week.

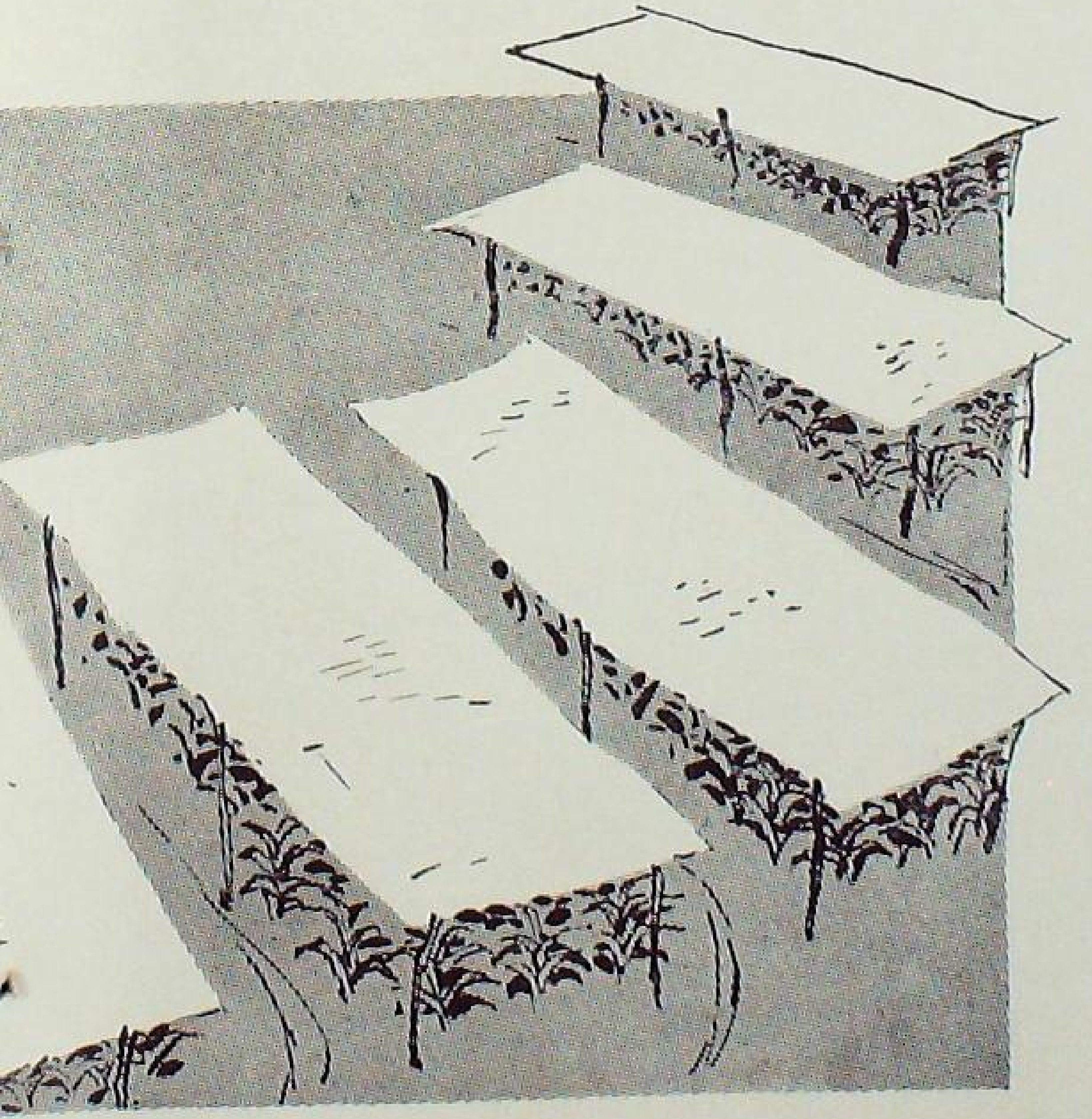
Take good care to keep the birds disease-free. Get them vaccinated against Ranikhet and fowl pox when they are four week old.

Don't delay selling your birds beyond 16 weeks. After that age, birds develop a tougher meat. They will also consume costly feed without giving you much in return.

By P. ABRAHAM

You can't expect to get good cardamom seedlings unless you use selected seed and sow it in prepared nurseries

How do you raise your CARDAMOM SEEDLINGS ?



FOR ages, growers have been raising cardamom and have been using the rhizome or the seedling mostly for planting.

When they use the rhizome, they split up the cardamom clump into sections, each containing one old and one new shoot. They place the section in the hollow of the prepared pit, and cover with soil and mulch.

The plants that come up bear earlier than the seedlings by a year. But, the number of plants thus available will be limited, and where 'mosaic' disease is present, the use of rhizomes will only help in spreading the disease.

In fact, till this widespread disease is completely brought under control, planting by rhizomes has to be completely avoided.

The other method followed is to collect seedlings that have come up by themselves in the plantations, or raised by sowing seeds in cleared jungle areas and transplanting the same after a year.

As both the methods of raising cardamoms are not good, growers should better follow the new improved method shown by research as the best.

This consists of germinating seeds in prepared beds, transplanting the seedlings that come up in a second nursery-bed, and then finally planting them cut in the field.

In experiments, it was seen that cardamom seed gives the best germination if sown immediately after harvest. With delay, the seed gradually loses its germination power.

Seed-beds raised on terraces in the lower reaches of hill slopes, and near a water source and pot-watered give better seedlings

than those laid out in wet-lands and low-lying areas.

The beds can be three feet broad and six to ten feet long, with space in-between the beds for one to move about easily for watering and other operations.

While you should keep the beds moist and well-drained, avoid undue wetness, as this leads to diseases.

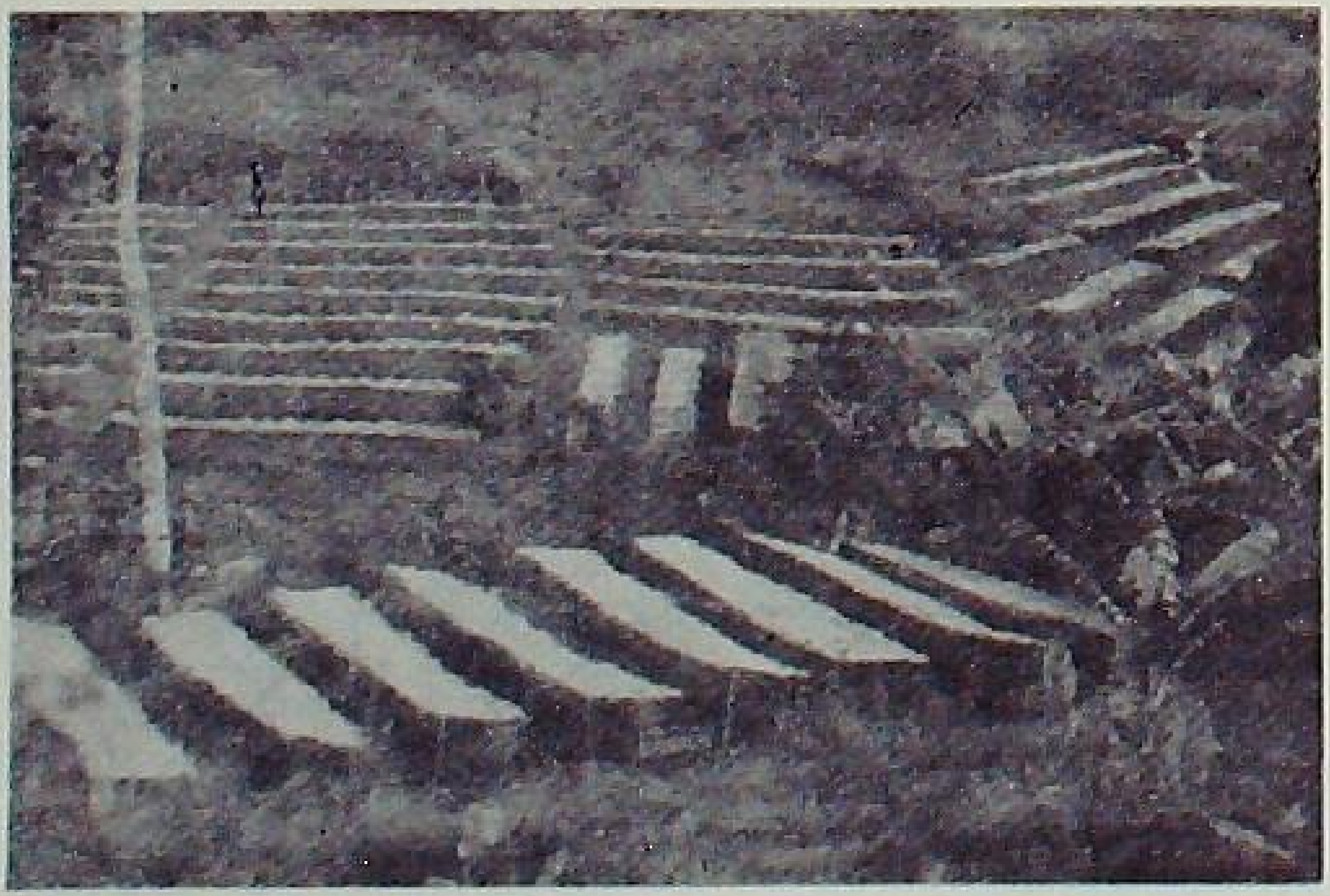
Spread a mixture of equal quantities of wood-ash and well-rotted cattle manure an inch thick over the beds.

Water the beds daily for a fortnight before sowing. Weeds will come up, which you can promptly remove.

It is necessary to shade the nursery beds, right from sowing. A rain-proof thatched slanting roof is the best. The roof should face the east, so that the bed gets the full morning sun. You can do the thatching with jungle grass, or any other suitable material.

The best time for sowing is seen to be December to March in the extreme south of the cardamom-growing area, and September-October in the northern regions of Mysore.

A series of first nursery beds in terraces



It is important that you use the best seed for sowing. Collect seed from plants giving good yield, and fruits which are bold, globular or ovoid in shape and borne on compact ears, and free from pest or disease.

It is better that you mix the seed with some coarse sand. Put the mixture in a bottle and shake it well. This helps in scratching the seed-coat and will speed up germination.

SOWING THE SEED

Scatter the seed evenly on the seed-bed. About 80 seeds go to a square foot. Cover the seed with 1/8 inch thick layer of fine sand.

Mulch the beds next. A grass mulch gives the best results. If grass is not available, use jungle debris or *amla* leaves.

Remove the mulch when most of the seeds have germinated.

After mulching, water the beds with a rose-can. In the early stages, water twice daily, and give enough water.

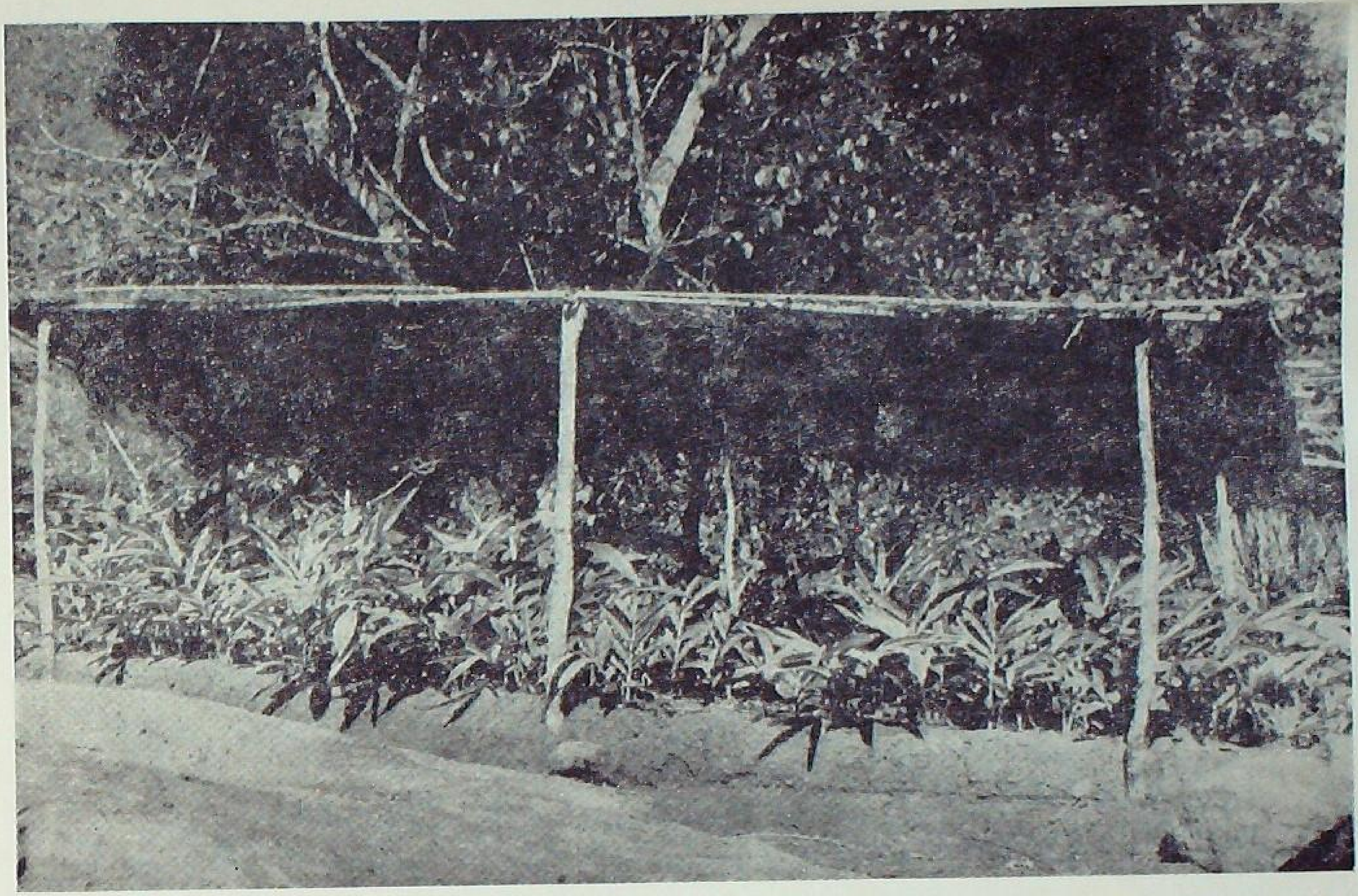
Every fortnight, spray the seedlings with Bordeaux mixture (one per cent) to keep off nursery diseases, especially the 'damping off' disease.

SECOND NURSERY

When seedlings are a year old, or have grown a couple of leaves, transplant them in a second nursery bed. This will help give them better space to grow, and escape damage from nursery leaf-rot and other diseases.

You can prepare this second nursery just as you prepare the first one.

Depending on the growth of the seedlings, plant them in the second nursery 6

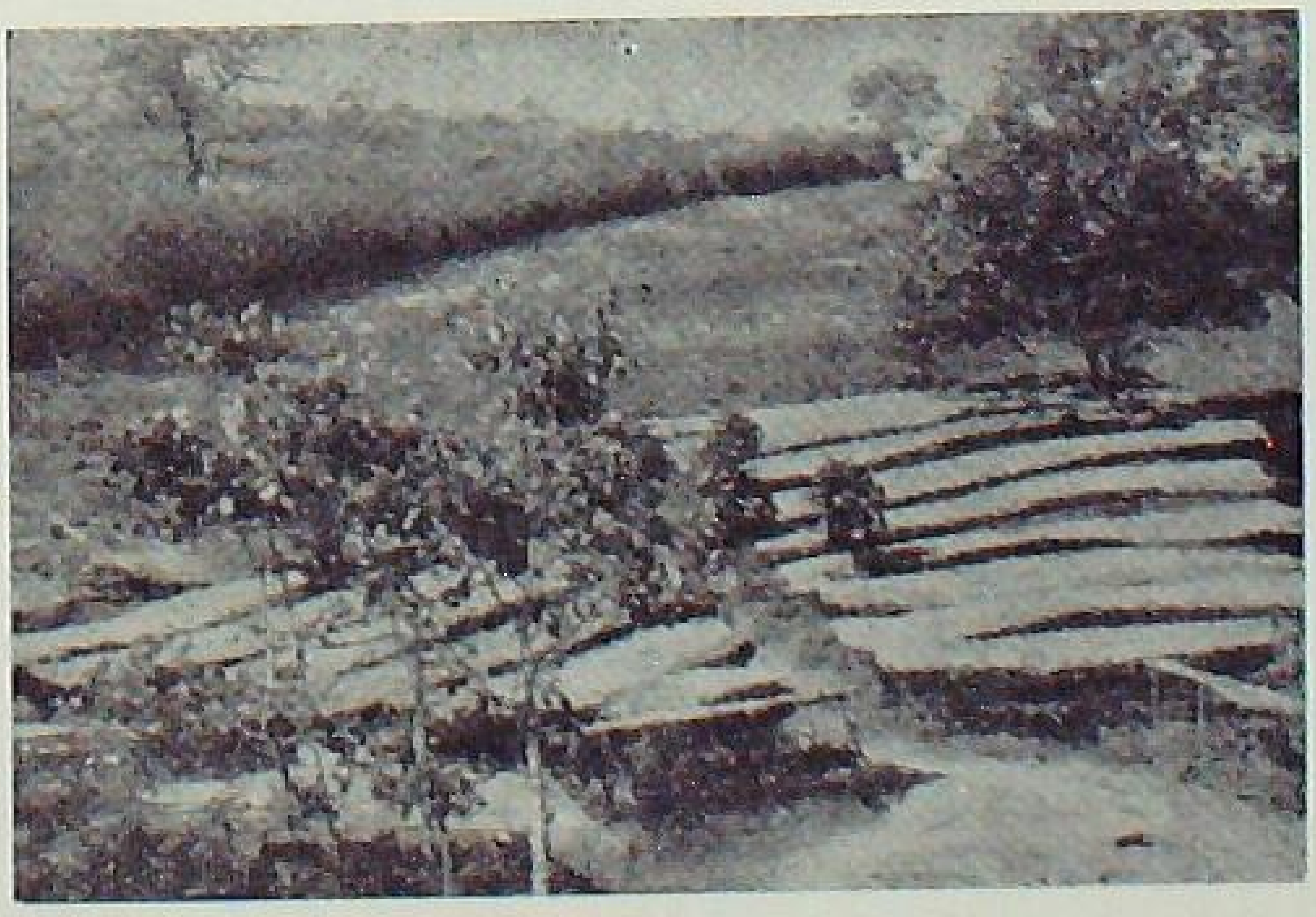


Cardamom seedlings coming up well in the second nursery

to 12 inches apart. Sometimes, it may be necessary to plant them two feet apart.

Shade this nursery lightly with pandals, three to four feet above the ground, with leafy twigs as the roof.

A series of second nursery beds



You may have to water this nursery during the summer.

If you don't like the idea of a second nursery bed, then take out those seedlings which are ready for transplanting from the seed-beds and plant them under good tree shade, in pits two feet apart, two seedlings to a pit. Add a mixture of cattle manure and ash to each pit before planting.

If you plant this in June, no watering would be needed. You have to weed the pits, however.

Give the cardamom seedlings a good chance to grow and yield well by giving them good attention in the nursery.

CASTOR
can earn a bonus for you

Castor offers a bonus of Rs. 20 a year if you care to earn it

CARE to earn an extra Rs. 20 a year? This is the bonus castor can give you per acre if you grow it on your field bunds.

It can be a good 'border' crop to sugarcane, bananas, grapes and other fruit crops, turmeric, chillies and irrigated cotton (as in Maharashtra).

Or, if you can't spare the field borders, grow it along water channels, irrigation canals, river and tank-bed areas, fallow lands and along contour bunds.

Castor will come up with a rainfall of 25 to 40 inches. It stands drought, but not water-logging or frost.

The best soil for the crop is deep loam sandy or clayey.

Maharashtra farmers dibble two to three seeds in each place along the field borders, every five to six feet. The seed is sown two feet above the base of the bund.

The plants that come up get their needs of water and food from what you give to the crop in the field. Hence you don't spend anything extra on castor.

The only thing you have to be careful about is an attack from the castor semilooper which feeds on the leaves. When you see the semilooper, spray early with lead arsenate or Paris Green, or dust with DDT.

Harvest the 'capsules' from time to time when you find half of them on a fruiting branch mature and dry.

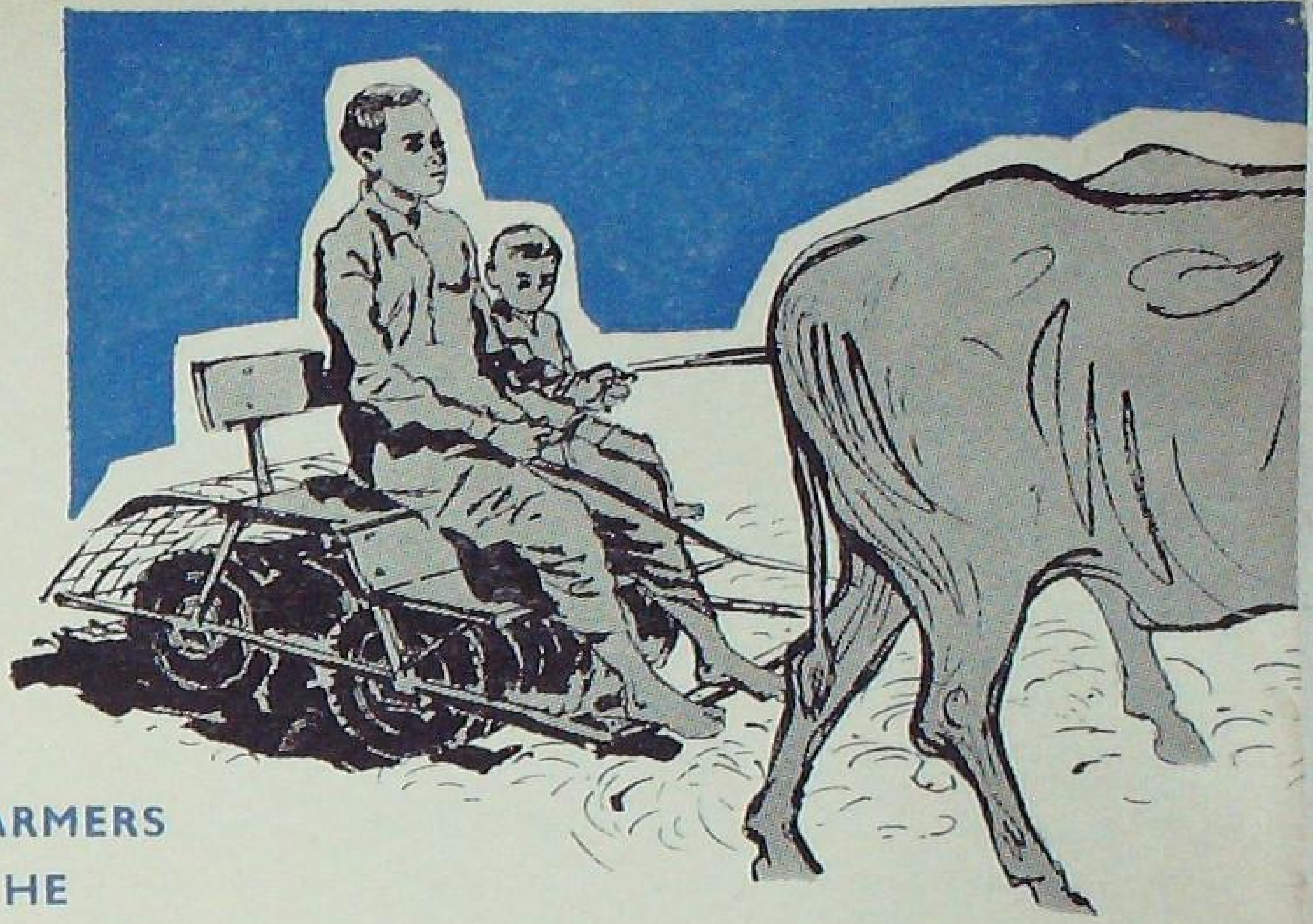
You will have 80 to 100 plants on the borders of an acre of field. Each will yield you three to four pounds of castor-seed. If on contour bunds, the yield may be one to two pounds per plant.

Along water channels and in river and tank-bed areas, you can grow the perennial variety of castor. Each plant will give you five to eight pounds of seeds a year.

To help you get a still better bonus from castor, State Departments of Agriculture have special high-yielding varieties to offer to you.

H. C. 6 and *TMV-1* in Andhra Pradesh, *S-20* in Maharashtra, and *TMV-2* and *TMV-3* in Madras, are some popular high-yielding castors.

THIS TIME, MAKE THRESHING A FUN !



THAT'S WHAT MANY FARMERS ARE DOING BY USING THE OLPOD THRESHER

By D. N. KHERDEKAR

SHORTLY, farmers will be harvesting their wheat.

And most of them will have it threshed under the bullocks' feet.

It will take them a number of days to complete this tedious job. They will also find that as long as threshing is going on, the bullocks will not be free for the ploughing work in the field.

Some at least these days don't face this trouble. This is because instead of bullocks, they use an easy-to-thresh implement.

Called the Olpod thresher, this implement is getting popular with farmers for threshing wheat.

The Olpod thresher is simple. It has a number of notched discs placed on two or three axils in a rectangular frame. Over the frame is a seat for the driver, with a gaurd to protect him from falling off.

Attach a pair of bullocks to the thresher, put a few weights if need be on the frame, and work the implement on the circular threshing floor.

You will see it breaking the straw into pieces, and the grain separating from the straw.

It will cost you 75 nP. to thresh 1,000 pounds of wheat; compare it with the Rs. 1.30 you will have to spend for threshing the same quantity with the bullocks.

There are three types of threshers: one with 21 discs, another with 14, and the third with 11, the last being suitable for the hilly areas.

An Olpod thresher (three firms are selling them in India) costs Rs. 300 to 400, depending on the size.

The village blacksmith can repair the thresher easily.

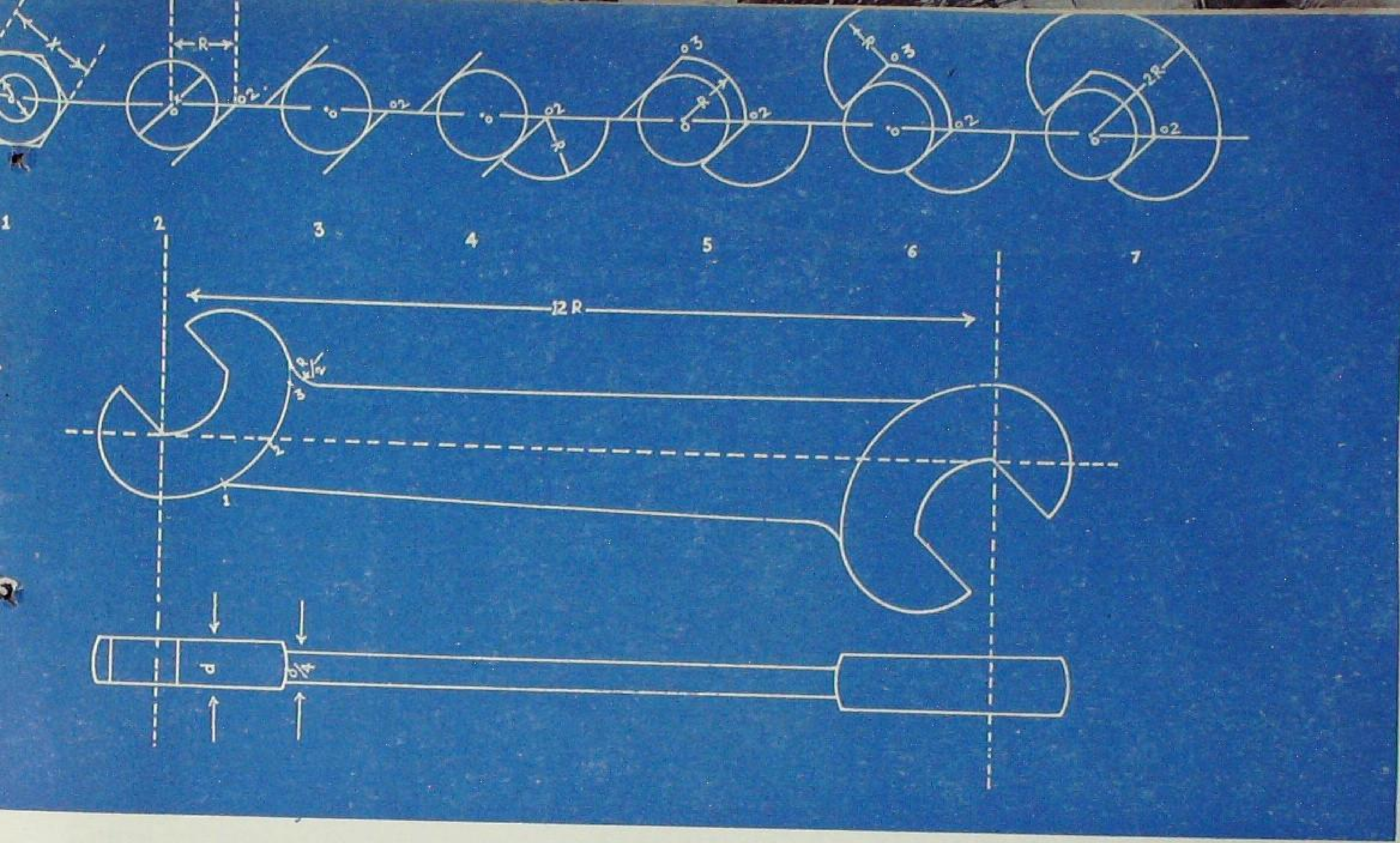
If you are owning a tractor, you can get a thresher and attach it to the tractor. You can also own a tractor and the thresher cooperatively with other farmers of your village.

HOW TO MAKE A PLOUGH SPANNER

By M. A. RAFIQUE

Farmers all over the country are using more and more improved agricultural implements. And to keep these implements in working order, they often make use of a spanner. Here is described a double-end plough spanner, which can be easily made by even a village blacksmith.

STEPS	KEY POINTS
1. Measure the breadth of the nut for which the spanner is to be made, from flat to flat as shown in sketch 1 and let this be 'X' inches or centimeters.	Use one outside callipers and measure the width by means of a steel rule.
2. Mark off the centre 'O' and describe a circle of diameter 'X' inches or centimeters. Draw a line at an angle of 45° touching the circle and the horizontal axis at 'O' as shown in Figure 2. Measure the distance of the point 'O' from the centre of the circle and let this be 'R' inches or centimeters.	Use centre punch, hammer, divider and steel rule to mark the centre and describe the circle. Draw the line at 45° with the help of a 45° set-square beneath the horizontal axis and measure the distance of 'R' with the steel rule.
3. Draw another line as in step number 2 but above the horizontal axis shown in Figure 3.	Same procedure as in step number 2.
4. With 'O' as centre and 'R' as radius, describe an arc as shown in Figure 4.	Use the divider and steel rule.
5. With 'O' as centre and 'R' as radius, describe an arc cutting both the angle lines at O_2 and O_3 above the horizontal axis and mark of O_3.	Use the divider, steel rule, centre punch and hammer.



STEPS	KEY POINTS
6. With O_3 as centre and 'R' as radius, describe an arc as shown in Figure 6.	Use the divider and steel rule.
7. With 'O' as centre and 2 R as radius describe an arc as show in Figure 7.	Use the divider and steel rule.
8. With R as radius, mark off the points 1, 2 and 3 on the outer line of the face of the spanner—point 2 being the centre line and 1 and 3 the width of the body.	Use the divider and steel rule and proceed from the vertical axis on the outer circle of the face of the spanner as shown in the figure.
9. Mark off a distance equal to 12 R from the vertical axis and obtain the length of the spanner.	Use the divider and steel rule and mark off the verticle axis on the outer side with the help of the try square.
10. Mark off the other face of the spanner to the size.	Follow the procedure adopted as in the case of the other face.
11. Join the points 1 inch, 1 inch and 3 inches, 3 inches on the outer circle of the faces and shape the body at the points 3, 3.	Use the divider and steel rule and mark off the curves with R/2 as radius.
12. Mark off the thickness of the faces and the body as shown in the sketch.	Mark the thickness of the faces equal to the diameter of the bolt 'd' and that of round the edge of the face with radius 'R.'

They call it NAPIER GRASS

By P. C. RAHEJA

Those who grow it like it, because it gives, with every cutting, a 150 maunds of green and rich fodder

FOR a long time now, farmers have been growing Napier grass for getting green fodder, especially during the lean seasons.

Under sewage farming or on a dairy farm, where good quantities of dung and urine are available, this or Guinea grass will be your best choice as a perennial fodder crop.

Napier comes up well in the field where you can't grow other crops. But if you want heavy fodder yields, give Napier a rich soil, avoiding a water-logged one.

Prepare the soil well. Apply five to ten tons of cattle manure per acre. Mix it well with the soil. Then plant slips of the grass, two feet apart in rows three feet apart. Plant the slips upright, and irrigate soon after.

In a week, you will see the slips growing up rapidly. Ninety per cent of the slips will thus germinate. You will need 16 maunds of slips to plant an acre.

Keep the field clean of weeds. Intercultivate between the grass lines. Intercultivate after every two or three cuttings.

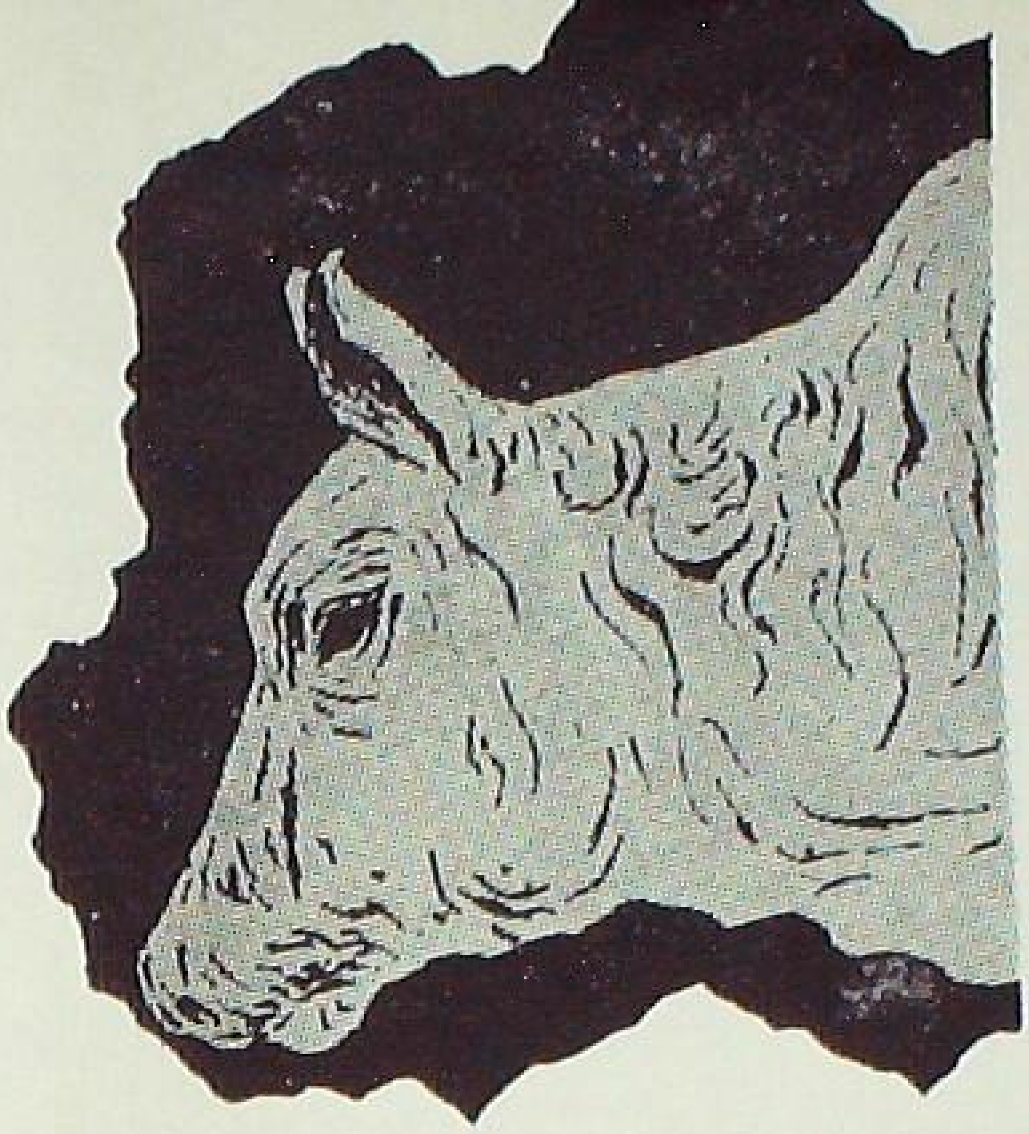
To get better yields, fertilize Napier. Give the grass 200 pounds of ammonium sulphate and 125 pounds of single superphosphate. Apply the fertilizers in the spring.

Napier needs good water. Irrigate once in 10 to 12 days in summer, and once in every 15 to 20 days in winter. The rule with this grass is, the wetter the soil the higher the yield.

You will get the first cutting of the grass in March (in north India), and the following ones once every four to six weeks. Each cutting will bring you about 150 maunds of green fodder. In a year, you can get eight such cuttings.

Don't allow the grass to get woody before you start taking cuttings from it.

Napier grass also makes a good silage.



DON'T WAIT FOR THAT SCABIES TO HEAL BY ITSELF

WHEN THE DISEASE HITS YOUR HERD, THE ANIMALS LOSE THEIR CONDITION, THEIR MILK PRODUCTION GOES DOWN AND THEY ARE EXPOSED TO ATTACKS FROM MANY MORE DISEASES

By **A. C. MATHUR**

SCABIES (also known as mange, itch or scab) is more common in the winter than in summer, though it may occur at any time of the year. Unhygienic conditions and over-crowding in stalls help in the spread of the disease. It spreads from one animal to another and may infect man as well.

Mites, which cause the disease, infect those parts of the body where the hair is thin and the skin tender. The disease causes severe itching around the eyes, face and neck, although it can also appear elsewhere on the body. The affected animals constantly rub themselves against the walls or other fittings in the stall. From the affected parts, the hair falls out and scabs appear on the surface of the skin. After some time, the skin becomes wrinkled, hangs in thick folds, and becomes hard and leathery. If timely treatment is not given, the disease is likely to spread to other parts of the body.

Other forms of mites affect parts of the body around the whithers, top of the neck, just in front of the whithers and the base of the tail.

The treatment for the disease consists of applying certain dressings to the skin which help kill the mites without injuring the skin of the animal. A common and effective dressing ointment is made of the following: sulphur (two parts), oil of tar (one part), potassium bicarbonate (one part) and simple oil (eight parts). Apply this dressing twice a week, and continue the treatment till the hair begins to grow again. Other useful and common dressings are solutions of lime-sulphur and nicotine. The concentration of the nicotine should be 0.05 per cent in water. A higher concentration may be injurious to the animals.

Before applying the dressing, wash the affected part with soap and water to remove dirt, scales and crusts. After washing, thoroughly dry the skin and apply one of the above dressings.

During the period of treatment, feed the animal well. A well-fed animal will recover quickly. Also properly disinfect the clothes and utensils used while applying the dressing to the animal. In case of a severe attack, you are well advised to take the animal to the nearest veterinary hospital for treatment and advice.

TRANSPLANTING

Transplanting, manuring and watering—these are the main things you have to be busy with this month

MANURING

WATERING

WHAT TO DO AND
HOW TO DO IT IN

YOUR ORCHARD IN FEBRUARY

By DALJIT SINGH

HIMALAYAN TEMPERATE REGION

States : Parts of Assam, Kumaon Hills (U.P.), Himachal Pradesh, the Punjab Hills, Kulu Valley and Kashmir Valley.

Fruits : *Apple, Pear, Cherry, Plum, Peach, Apricot, Strawberry, Persimmon and Grapes.*

You will be transplanting bench-grafted and callused apple plants in the nursery, and other deciduous fruit trees in the orchard (in the hills), continuing interculturing of orchards.

You should also attend to :

(i) the tongue-grafting of apple seedlings *in situ* in the nursery.

(ii) the completion of the application of fertilizers before the spring sets in.

(iii) the late pruning of grapevines.

NORTHERN DRY REGION

States : Plains of the Punjab, the western districts of Uttar Pradesh, western Madhya Pradesh and Rajasthan.

Fruits : *Mango, Citrus, Loquat, Litchi, Papaya*, Ber, *Fig, Date, Grape*, Phalsa, *Pomegranate and Guava.*

You will be digging pits for new plantations and planting fruits like oranges, limes and grafted mangoes.

You should also :

(i) Irrigate litchi, mango and loquat soon after their fruit-set.

(ii) Clear and hoe around the trees.

(iii) Apply artificial fertilizers to the citrus trees.

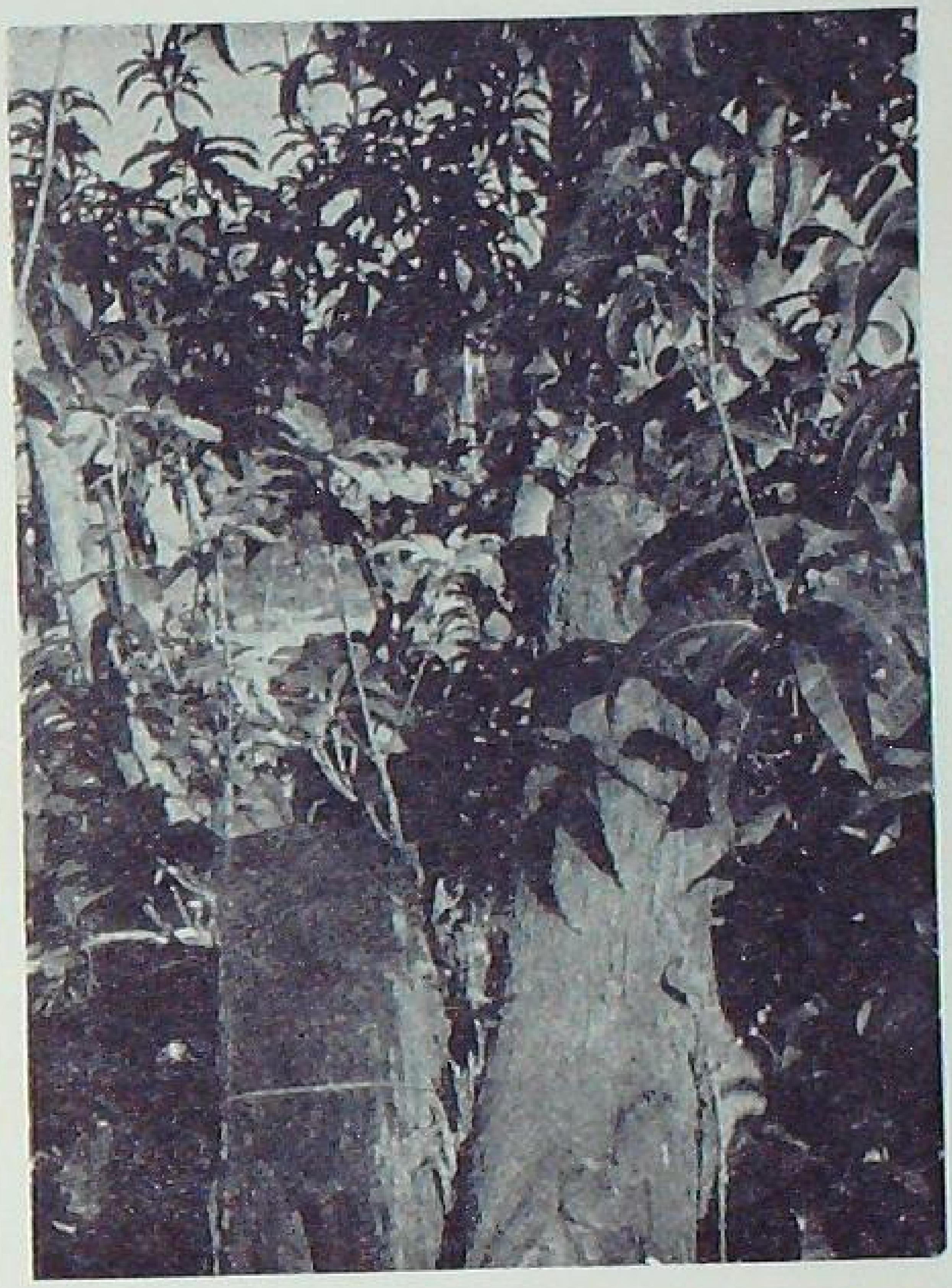
(iv) Sow papaya, and remove two-year old trees from the orchard.

(v) Calluse the plant cuttings of grapes, pomegranates and sweet limes.

Apply manure all round the tree, and mix it well with the soil

Furrow method of irrigation is good for your fruit trees

(vi) Transplant citrus seedlings in nursery beds.



A mango tree headed-back and top-worked

(vii) Hand pollinate dates.

(viii) Head-back *ber* and mango trees which require top-working for rejuvenation or replacement for better varieties.

EASTERN WET REGION

States : Southern parts of Assam, West Bengal, Bihar, Orissa, eastern Madhya Pradesh, eastern Uttar Pradesh and north-east Andhra Pradesh.

Fruits : *Mango, Citrus, Pineapple, Guava, Banana, Cashewnut, Jackfruit, Litchi and Papaya.*

You will be harvesting papaya fruits, budding (by shield method) of citrus plants and inarching of mangoes.

You should also :

(i) Earth up, manure and irrigate pineapples.

(ii) Water mango and litchi trees as soon as the fruit is set.

(iii) Dig banana plots and water the bed.

(iv) Spray with Bordeaux mixture at three-week intervals to control soft rot of jackfruit.

(v) Hoe and water papaya trees.

SOUTHERN REGION

States : Southern districts of Madhya Pradesh, western Andhra Pradesh and Madras, eastern parts of Mysore and Maharashtra.

Fruits : *Mango, Citrus, Banana, Guava, Grapes, Papaya,* Phalsa, *Fig, Pine-apple, Custard-apple, Jackfruit, Sapota, Cashewnut, Coconut and Pomegranate.*

You will be budding (by shield method) citrus plants in the nursery on stock seedlings raised of recommended varieties or species of citrus; also continuing new plantings of grapevines, dusting the vines with sulphur and providing protection to bunches by bagging.

You should also :

(i) Irrigate *phaisa* trees, now at flowering, at weekly intervals.

(ii) Train grapevines along erect bamboo stakes.

(iii) Check insect attack, mix one per cent 'Dieldrin' dust with soil.

COASTAL REGION

States : Strips bordering the Eastern and Western Ghats, parts of Mysore, Madras and Kerala States.

Fruits : *Mango, Breadfruit, Pineapple, Cashewnut, Citrus, Mangosteen, Banana and Papaya.*

You will continue to harvest mangosteens.

Clean cultivation of sapota orchards helps fruits grow faster and bigger

You should also :

(i) Manure bananas.

(ii) Spray cashew with 50 per cent wettable BHC 'Gammexane' at one pound in 25 gallons of water to control the green leaf-eating caterpillars and brown thrips.

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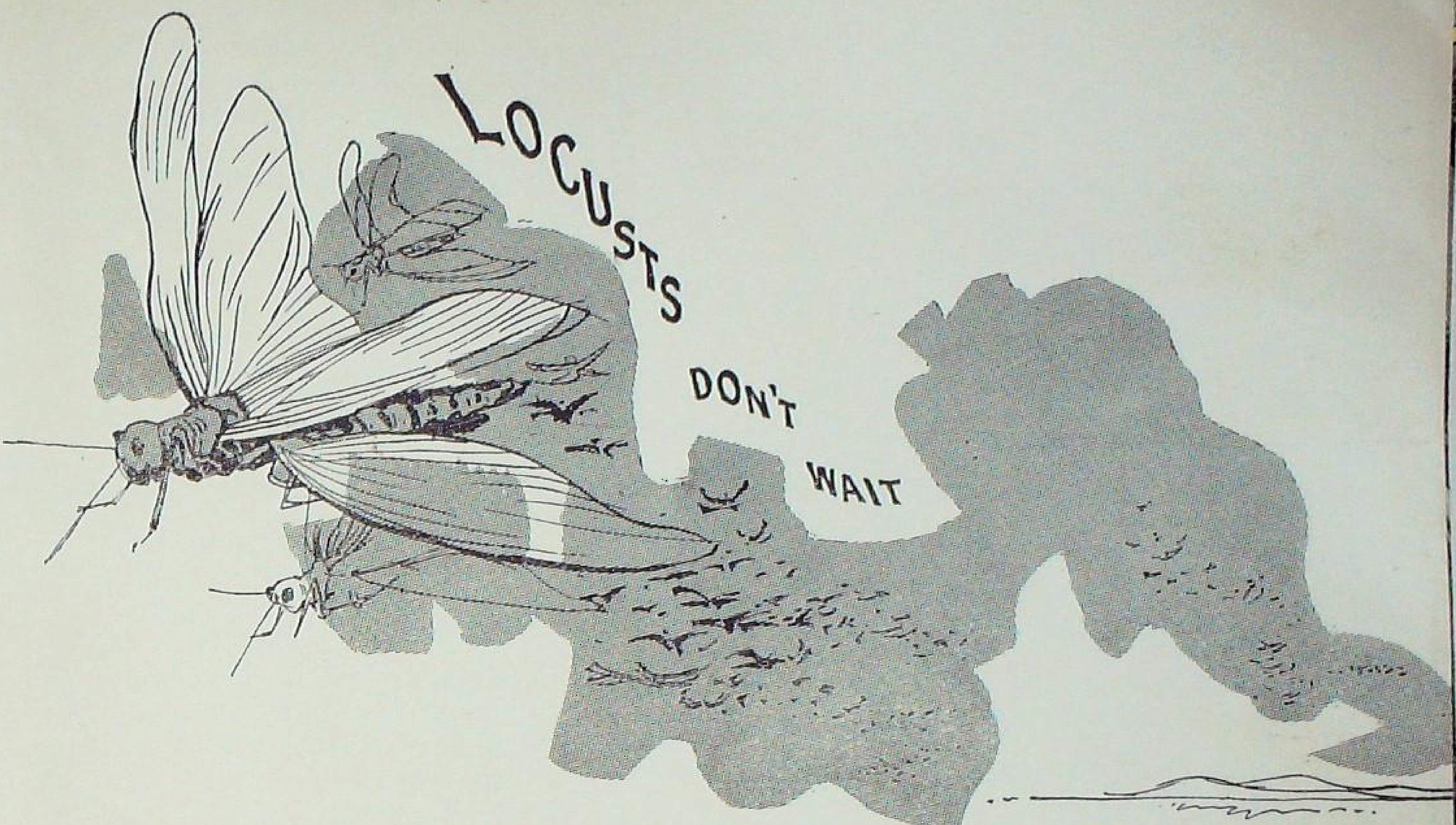


Nor should you ; when you see them,
do what you can to beat them out

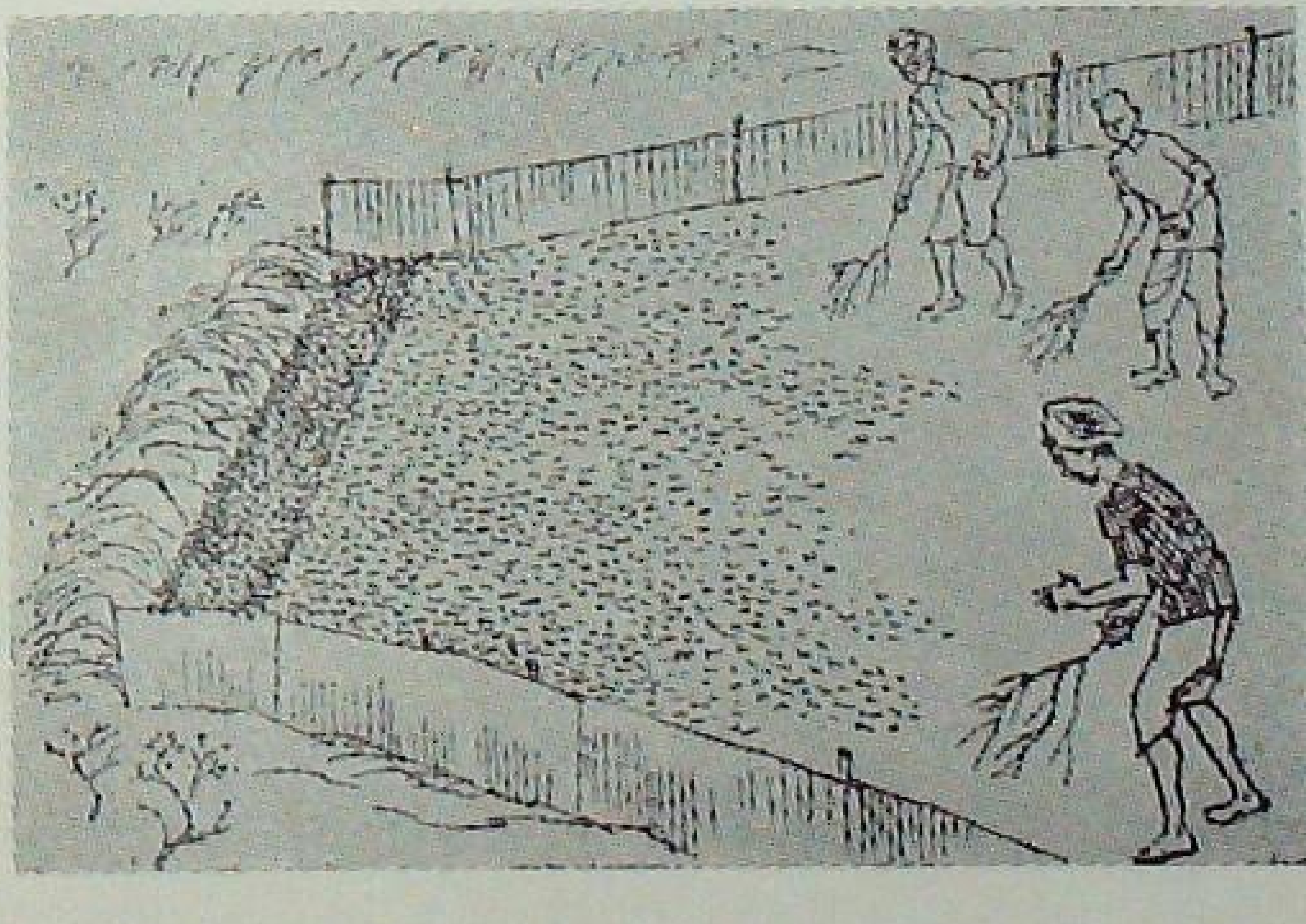
WHEN you see the locusts coming, don't you wait till the Government takes action to stamp them out. You and your neighbour can help stop them eating away all that is green on your farm.

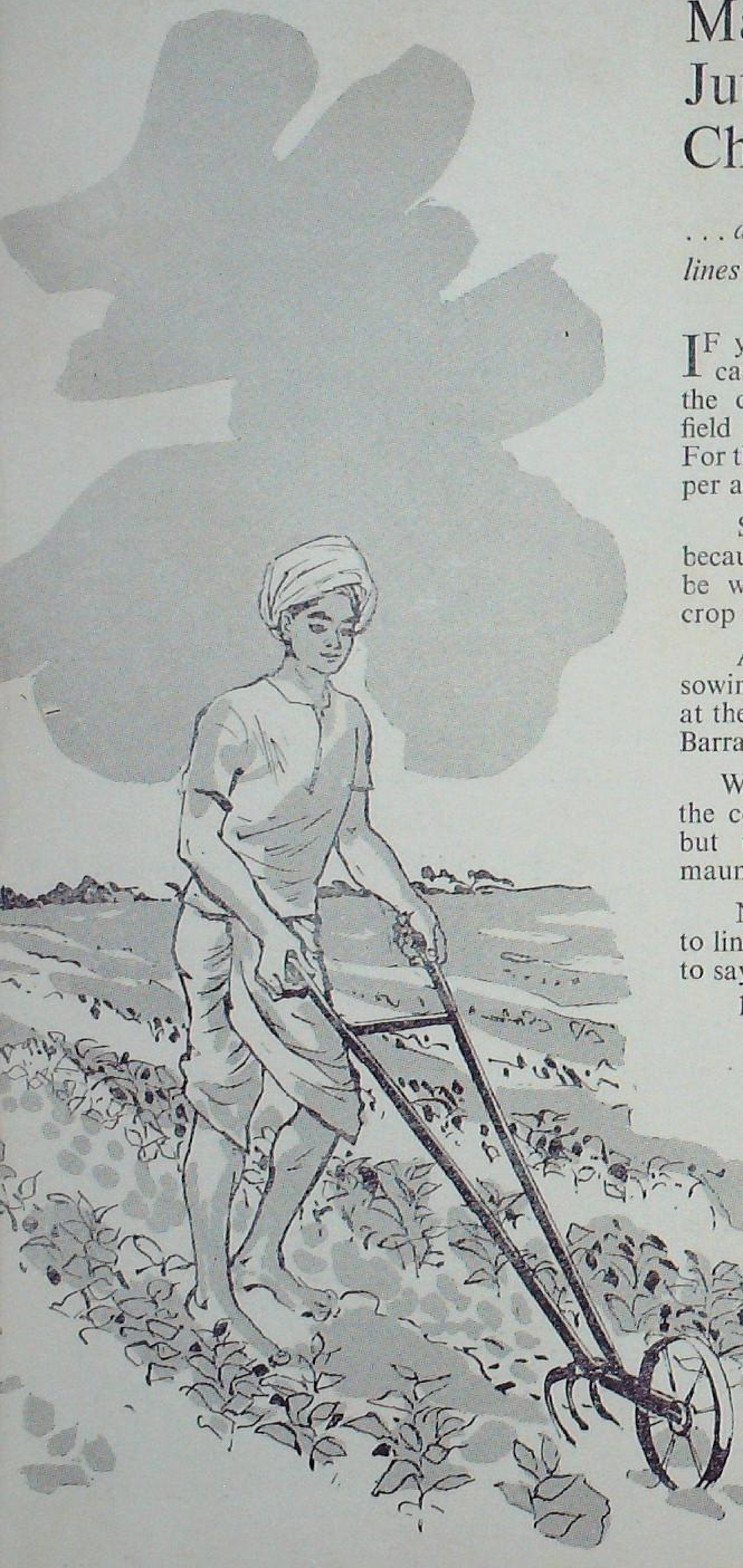
Of course, first inform the nearest Revenue or Agricultural Officer or any other Government agency of where you saw the locusts.

In the meantime, till help comes:

- Try to drive locusts away by burning rubbish or by beating empty drums or tins.
- Dig trenches a foot wide and two feet deep, around the field and along the direction in which the locusts are moving. Drive them into these trenches, and bury them there.
- Dig pits, four to six feet deep and two to three feet in diameter, in case you find hoppers in larger numbers.
- Dust ten per cent BHC on the locusts which have settled down on the crop. In case the locusts are not fully developed, use only five per cent BHC.

—D. BAP REDDY





Make Jute-growing Cheaper

. . . and all you need is to sow jute in lines

IF you are growing jute, and sow it broadcast, you know how much it costs to weed the crop. Jute needs that every bit of the field is weeded and the plants are thinned. For this, you have to employ 45 to 60 men per acre, at high daily wages.

Sometimes, you don't get the men, because every jute-grower needs his field to be weeded at the same time. Then your crop suffers.

As a solution to this problem, they tried sowing jute in lines with the help of a drill at the Jute Agricultural Research Institute at Barrakpore in West Bengal, some years back.

With a line-sown crop, they found that the cost of cultivation not only came down but the yield also increased by $3\frac{1}{2}$ to 5 maunds per acre.

Now, more and more farmers are taking to line-sowing of jute. Those who do, have to say these good things about it:

1. With a drill the seed is sown at a uniform depth; it germinates all at the same time; in a broadcast-sown

crop the seeds germinate in two or three instalments, and plants that come up later are weak.

2. Line-sown plants grow up with a uniform height and thickness. The fibre of such plants can be extracted in one lot, and it will also be of uniform quality.
3. The line-sown crop can be easily top-dressed with fertilizers. Chemicals for controlling pests and diseases can also be easily dusted because of the space between two rows of the crop.
4. You need less seed for sowing in lines. For *Capsularis* you need only five pounds, and for *Olitorius* three pounds of seed per acre.
5. The harvesting cost of a line-sown crop is lower.

For sowing your crop in lines, you need to buy a seed-drill and for interculturing, a wheel-hoe. You can use both these for other crops too. You can get them through your Agricultural Officer or Gram Sevak.

There are a few other things you must remember for sowing jute in lines.

1. Drilling jute gives better results in a slightly lighter type of soil than in a heavy soil.
2. Prepare your land well, so that you can get a fine seed-bed.
3. See that the soil has enough moisture before sowing.
4. Sow the seed $\frac{1}{2}$ to $\frac{3}{4}$ inch deep, and have the rows a foot apart.
5. See that the drill drops the seed uniformly.
6. After seeds have germinated, thin them, so that the seedlings are one to three inches apart. Draw a *bida* or a rake two or three times across the field for the purpose. Give a hand-weeding soon after, and see that the seedlings get the three-inch spacing.
7. During the first two months of the crop, work the wheel-hoe three to six times.
8. To get a good crop, apply 40 to 80 maunds of cattle manure per acre while preparing the land; apply 25 to 30 seers of ammonium sulphate between the lines along with the wheel-hoeing when the crop is a month old.

Bihar Strives for Increasing Agricultural Production

In the All-India Rabi Production Campaign of 1958-59, Bihar secured the highest increase of 42% over the previous 3 year's average produce of wheat, gram and barley in the country, as a whole, and thus won the national trophy (Rashtra-Kalash) in addition to the Community awards amounting to Rs. 1,80,000. In the following kharif and rabi campaigns of 1959-60 also, Bihar hopes to win similar Community awards because a large number of districts in Bihar have recorded more than 15% increase in production over the average produce of the corresponding three previous seasons. The credit for this performance goes to the farmers of Bihar and the Gram Sahayaks, who have utilised the suggestions of the Agriculture Department for increased food production.

The country needs more food and our farmers will undoubtedly respond to the occasion.

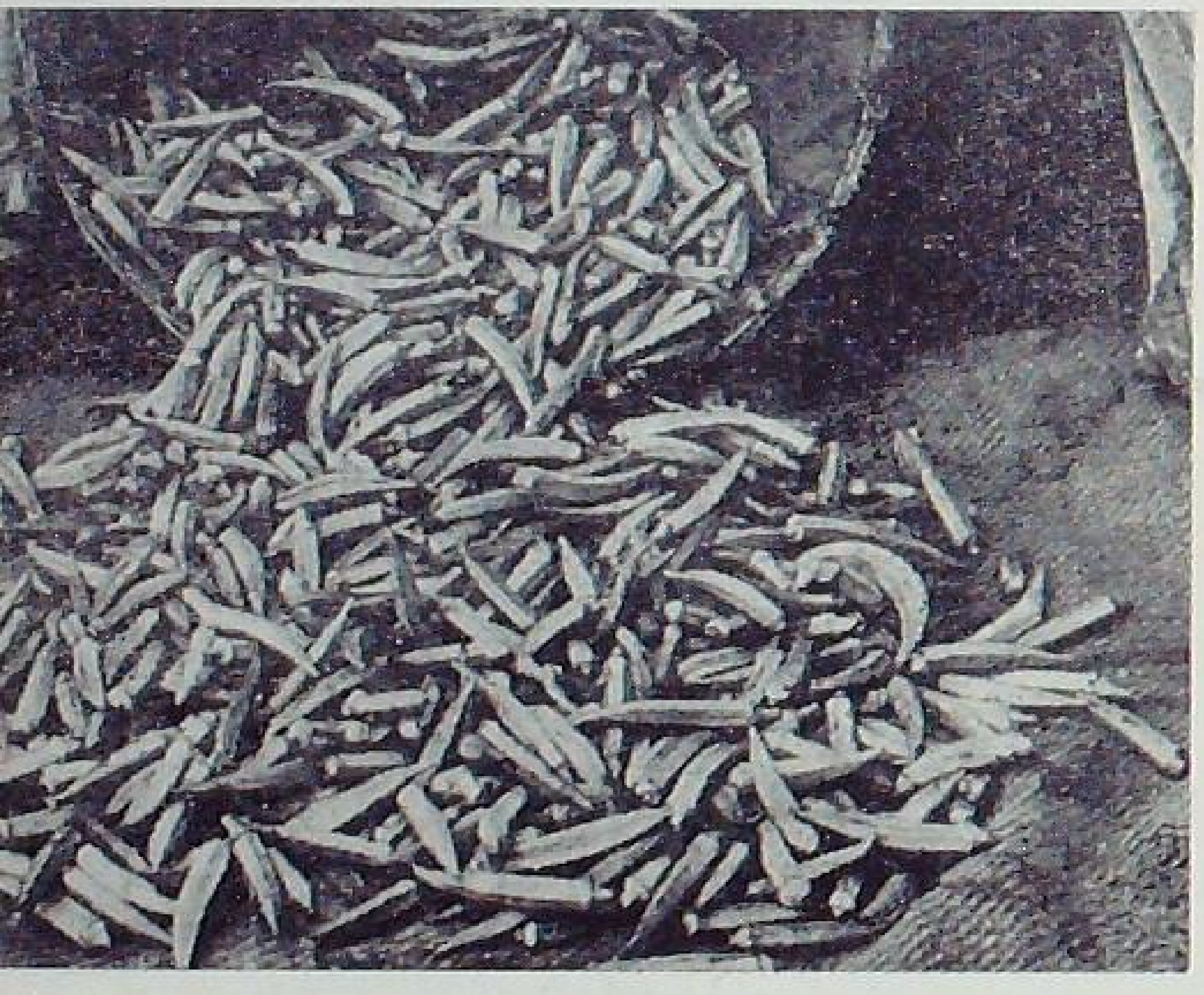
Issued by the

PUBLIC RELATIONS DEPARTMENT BIHAR

Plan Your Summer Vegetables Now

By L. VENKATARATNAM

There is still time to plan for a backyardful of vegetables this summer



May be these are your favourites

THIS summer, don't just dream about vegetables. Make your kitchen garden, however small it be, give you a continuous supply of vegetables for your table.

If your kitchen garden is a big one, supply some of the vegetables to the market too, as at this time they sell at high rates.

To do this, you must plan your summer vegetables *now*.

To get a regular supply of vegetables during summer, sow all leafy vegetables like *kulfa*, *palak* and *chaulai* at weekly or fortnightly intervals.

Regarding other vegetables like brinjal, bottle gourd, etc., plant them according to the number of days each takes to be ready.

Apart from these, you can plant some perennial vegetables in one side of your kitchen garden. A drumstick plant, for example, if planted in a corner of the compound will supply vegetables in April and May. If you plant crops like turnip,yam, potato and onion from July to November, you can harvest them after February. You can store these in a cool, dry place for use during summer.

Even taking the kitchen garden plot to be a 100 square feet, you can grow all the vegetables you like if you follow these tips.

Vegetables	*Time of sowing*	*Seed-rate for 100 running feet*	*Spacing*	*When to harvest*
1. Amaranthus (*Chaulai*)	March 15 to May 15	One salt spoon	1 foot x 1 inch	45 days after sowing
2. Brinjal	Raise nursery; transplant in February	One salt spoon	2 feet x 2 feet	April 15 to May
3. Bottle gourd (Lauki)	March	½ an ounce. 2 seeds per pit (2 feet diameter)	Pits 6 to 8 feet apart either way	May 15 to June 15
4. Bitter gourd (*Karela*)	March	do.	Pits 5 feet apart either way	May 15 to June 15
5. Cucumber (*Khira*)	January 15 to February 15	4 to 5 seeds per pit (2 feet diameter)	Pits 3 feet apart either way	April to May
6. Clusterbean (*Guar*)	April	½ an ounce	Sow in lines 1½ feet x 6 inches	June
7. Ladies finger (*Bhindi*)	March	¼ ounce	2 feet x 1 foot	May
8. Portulaca (*Kulfa*)	February to April	One salt spoon	Sow thinly in lines	March to May
9. Spinach (*Palak*)	February to April	One salt spoon	do.	March to May
10. Ribbed gourd (*Turai*)	February to March	4 seeds per pit (2 feet diameter)	4 feet x 3 feet	March to June

Select the ones you like best

CROP PESTS AND DISEASES IN FEBRUARY

AND WHAT TO DO ABOUT THEM

By D. B. REDDY

IN February, like in January, you can expect some of your crops to be attacked by pests and diseases. It is better you know what pests and diseases to expect and how to fight them. Here are some of the important ones. For further information and details, consult the Local Agricultural Officer or the Gram Sevak.

Crop	*Pest/Disease*	*Control Measures*
Gram	Gram pod borer	Use DDT, five per cent dust or 0.16 per cent spary.
Jowar	Grasshoppers	Dust five to ten per cent BHC.
Paddy	Helminthosporiose Blast	Spray 3 : 3 : 50 Bordeaux mixture or a copper fungicide in the nursery and 5 : 5 : 50 Bordeaux mixture or a copper fungicide in the post nursery stage.
	Stem borer	Spray 0.02 per cent 'Endrin' or 'Parathion' or other organo-phosphorus compound.
	Hispa	Dust five per cent BHC.
Potato	Cutworms	Dust five per cent BHC or 'Aldrin' around the plants.
	Jassids	Spray 0.1 per cent DDT.
	Blights	Spray 5 : 5 : 50 Bordeaux mixture or a copper or an organic fungicide.
Wheat	Rats	Use zinc phosphide bait.

Some of the pesticides like zinc phosphide, 'Aldrin,' 'Parathion' and 'Endrin' are very poisonous, and should be handled and used with great care.

A stitch in time...

By KANTA KHOSLA

A stitch in time not only saves nine, but also your garment.

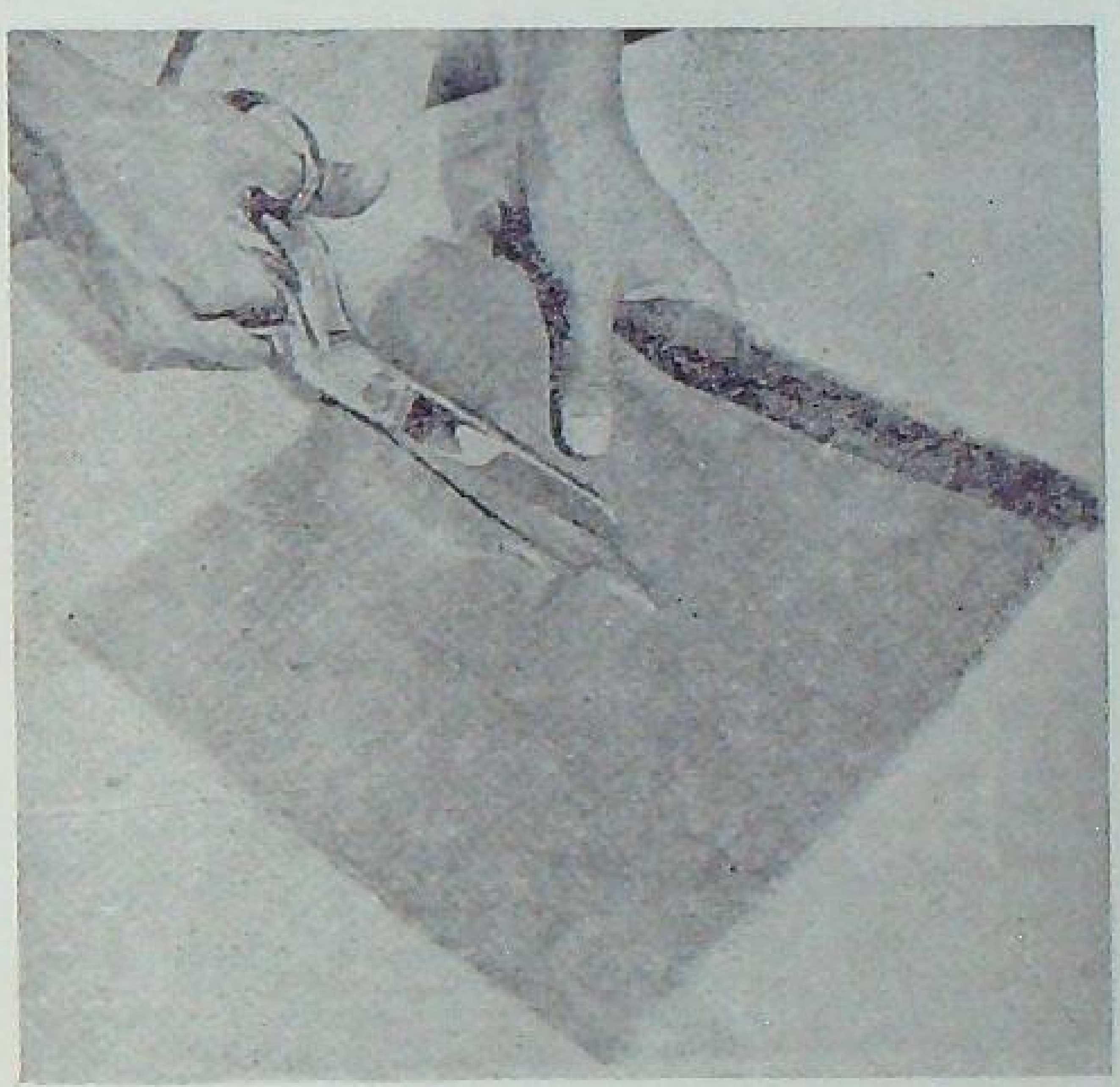
When your garment is worn out, all you have to do is to darn or patch it. This you do by replacing the woven but worn-out threads with new ones.

You can also call it a form of hand-weaving by which you prevent a hole from forming where the garment has become thin, by giving it new strength.

While darning, begin at the left-hand side of the part to be darned. It is easier this way to see any pattern that has to be repeated in the darn; the hand does not cover up the darn whiie darning is in progress nor will it rule over the mending as it might fray or become rough-looking.

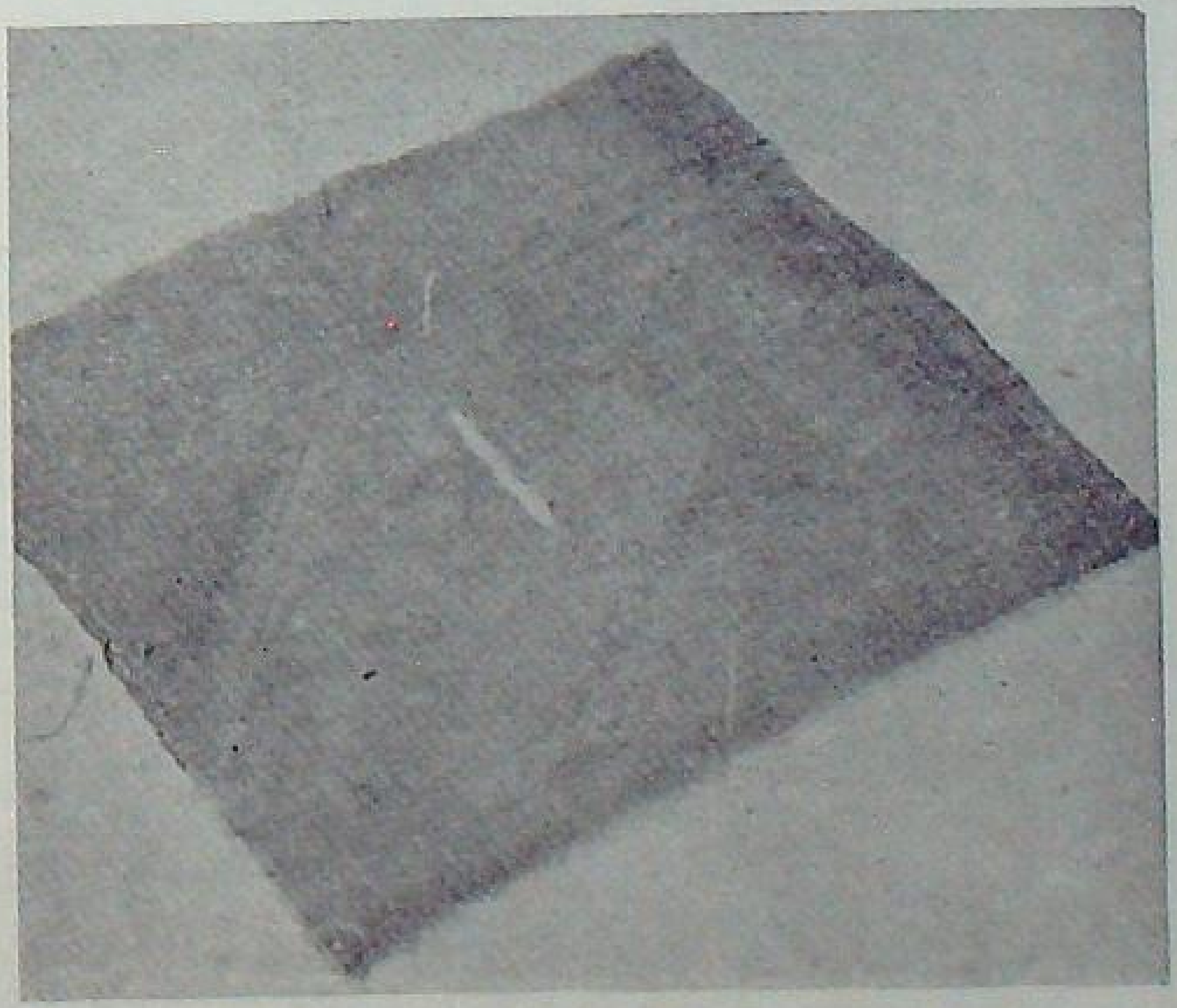
Make the darn of an irregular shape, so that the strain of the new thread is not borne by the same line of threads, making the darn weak.

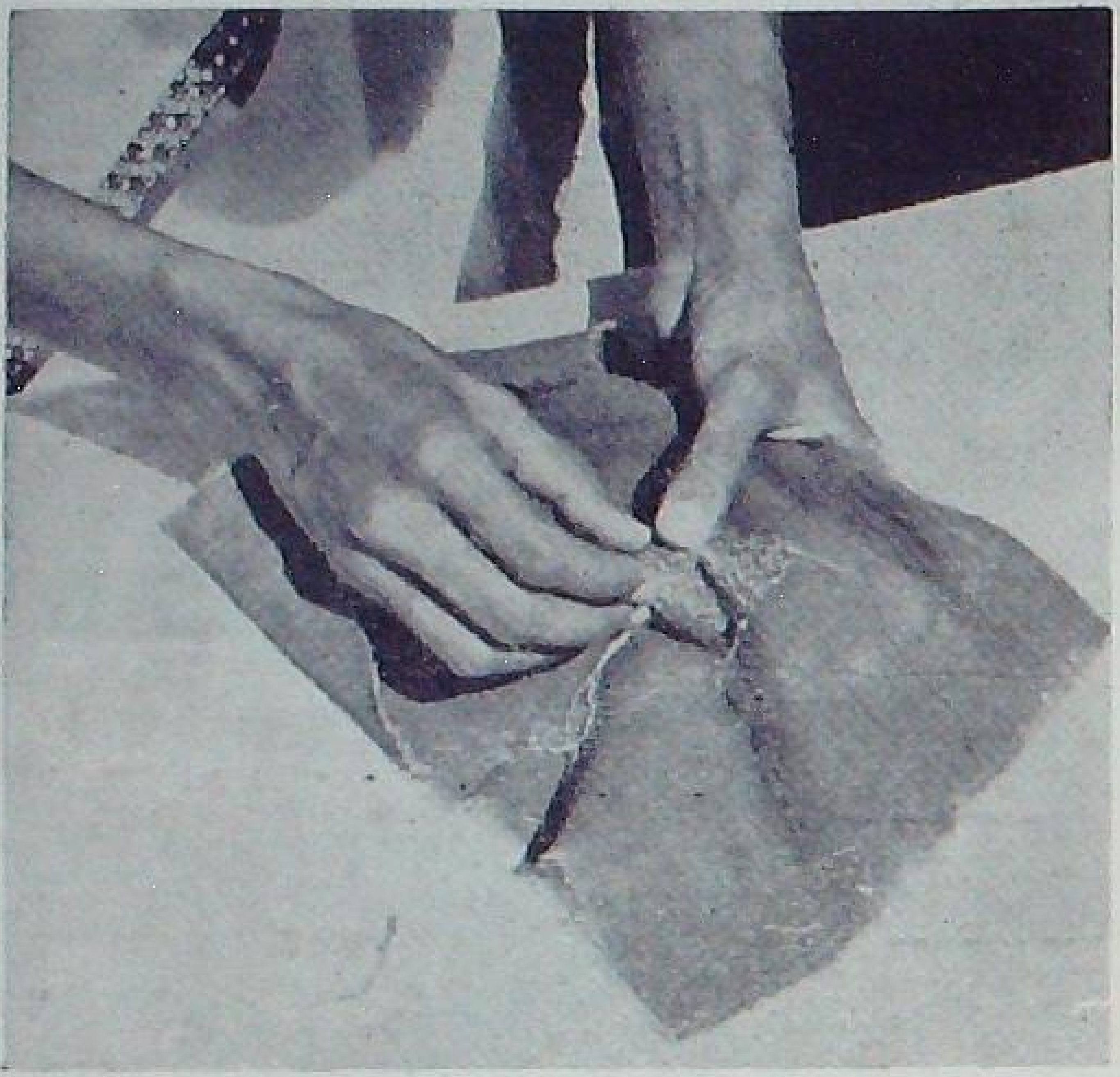
Use as strong a thread as the orginal one was and, as far as possible, same in colour,



Cut any straggling ends of cotton . . .

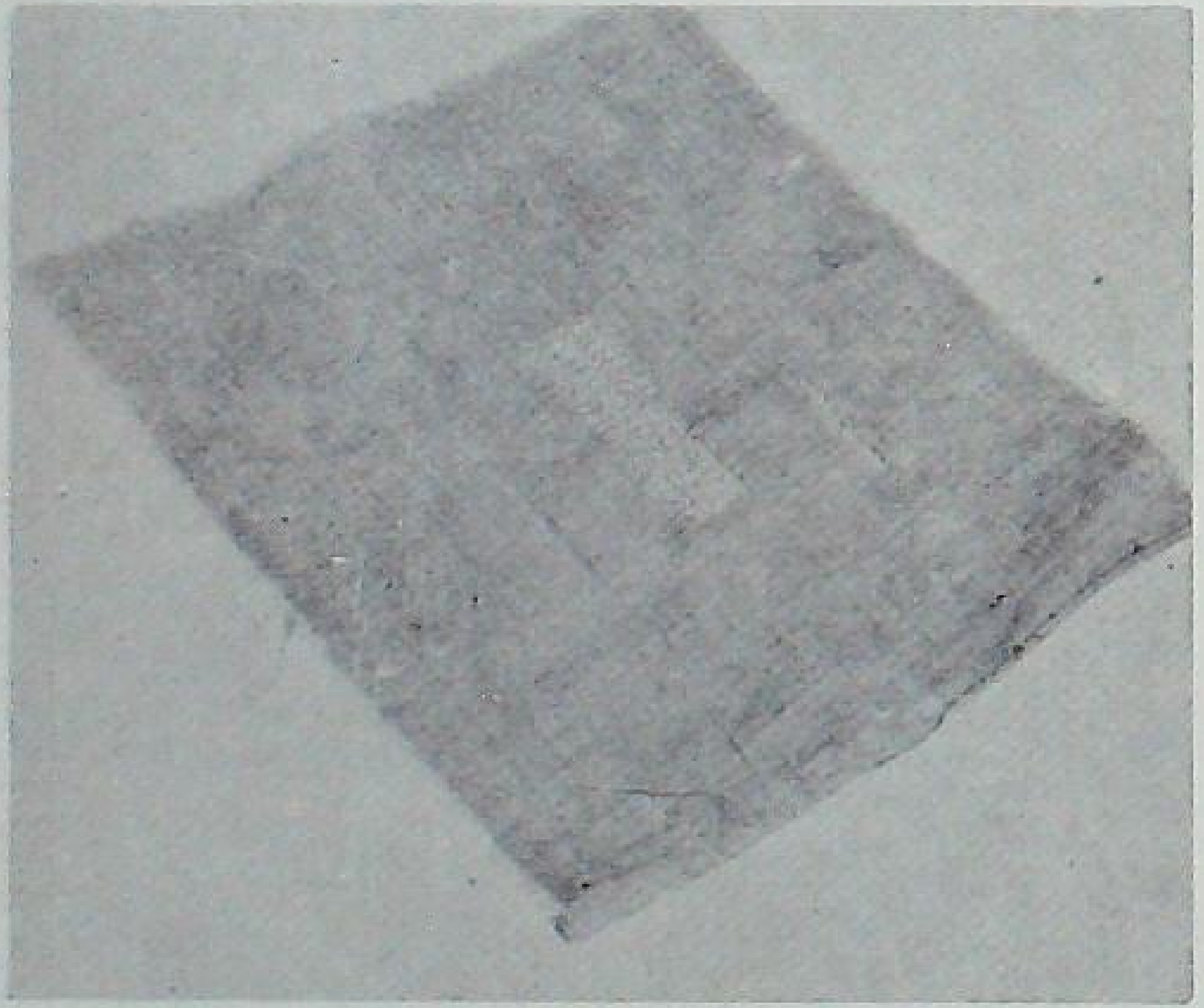
. . . and neaten the tear





Hold the cloth this way and darn

Darning is complete now



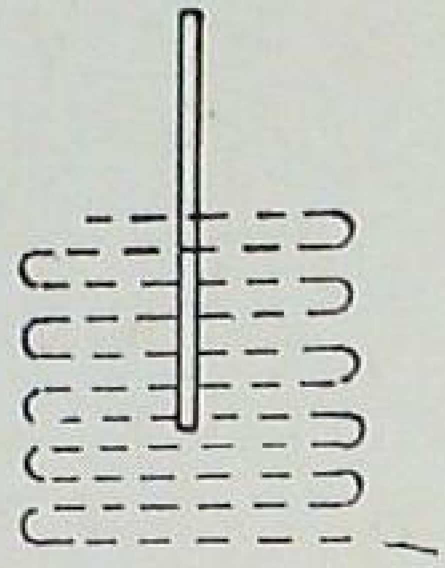
texture and stranding. The general rule is silk on silk, wool on wool, and so on.

Don't let the darn in any way strain the material or cause 'puckering.' Keep the work flat by keeping the thumb on the thread as it is pulled through the material.

Follow these steps:

- Cut off any straggling ends of cotton, and neaten the tear.

- Hold the material over the first and second fingers of the left hand slightly apart, with the thumb at the top. Hold the wrong side uppermost.



- Commence the darning $\frac{1}{4}$ inch to the left and above from the tear. Take up two to three threads on the needle passing over the same amount. Work the second row in such a way that the stitches opposite the one passed over in the previous row are picked up.

- Turn the work round and darn in the salvage threads which will be continued beyond the limit of the tear till it is even with the outermost edge on the opposite way of the material.

Keep the thumb always pressed on the tear when pulling the thread through.

Raw edges must all be on the wrong side.

Never pull and contract the hole.

Now you see how the tear is to be darned.

Our Cover Picture Grapes are so paying that the Hyderabad house-holders are earning Rs 500, they say, from just two vines grown in the backyard. Grape-vine growing needs good care. But it pays for every bit of attention it gets.

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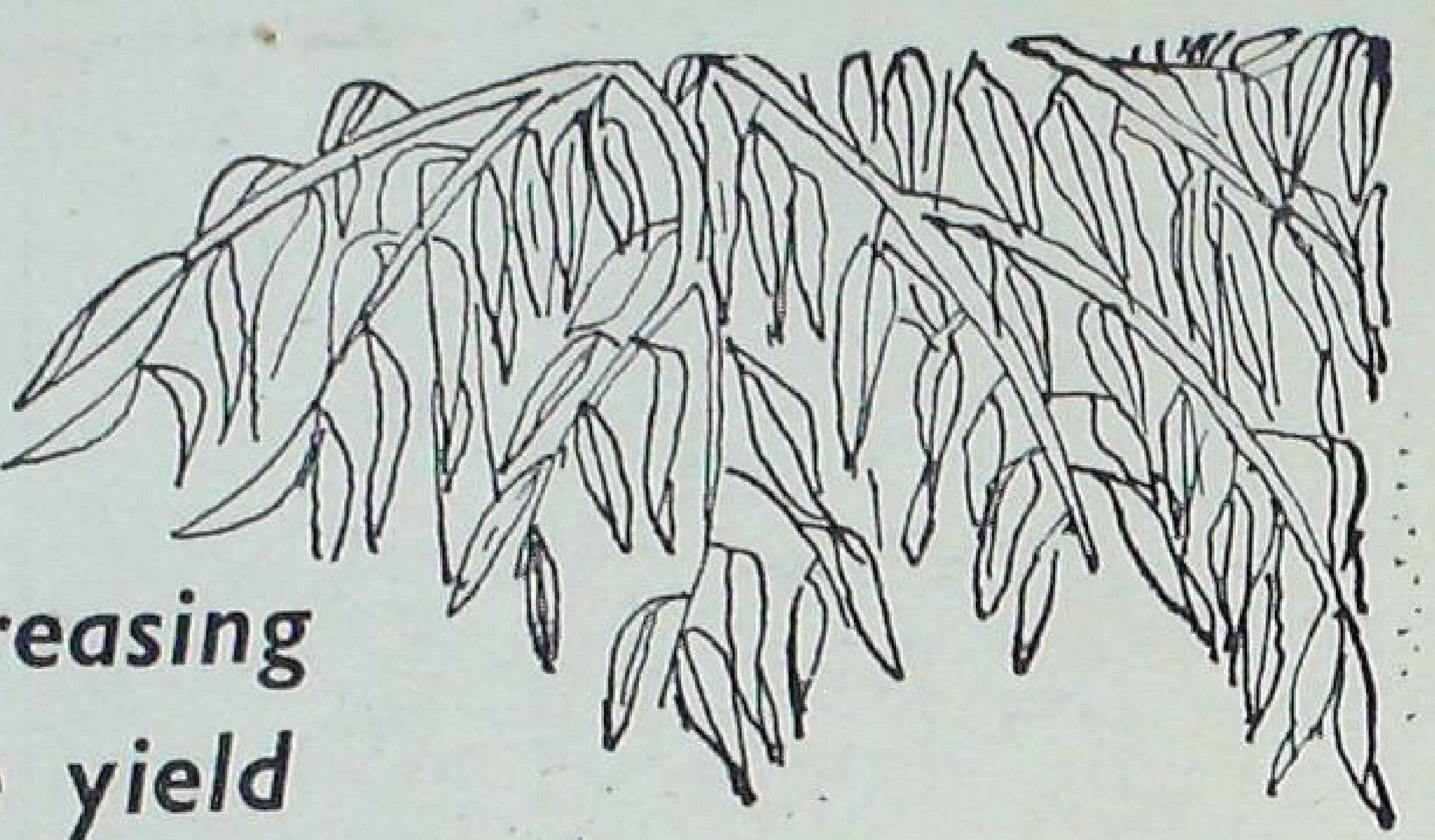
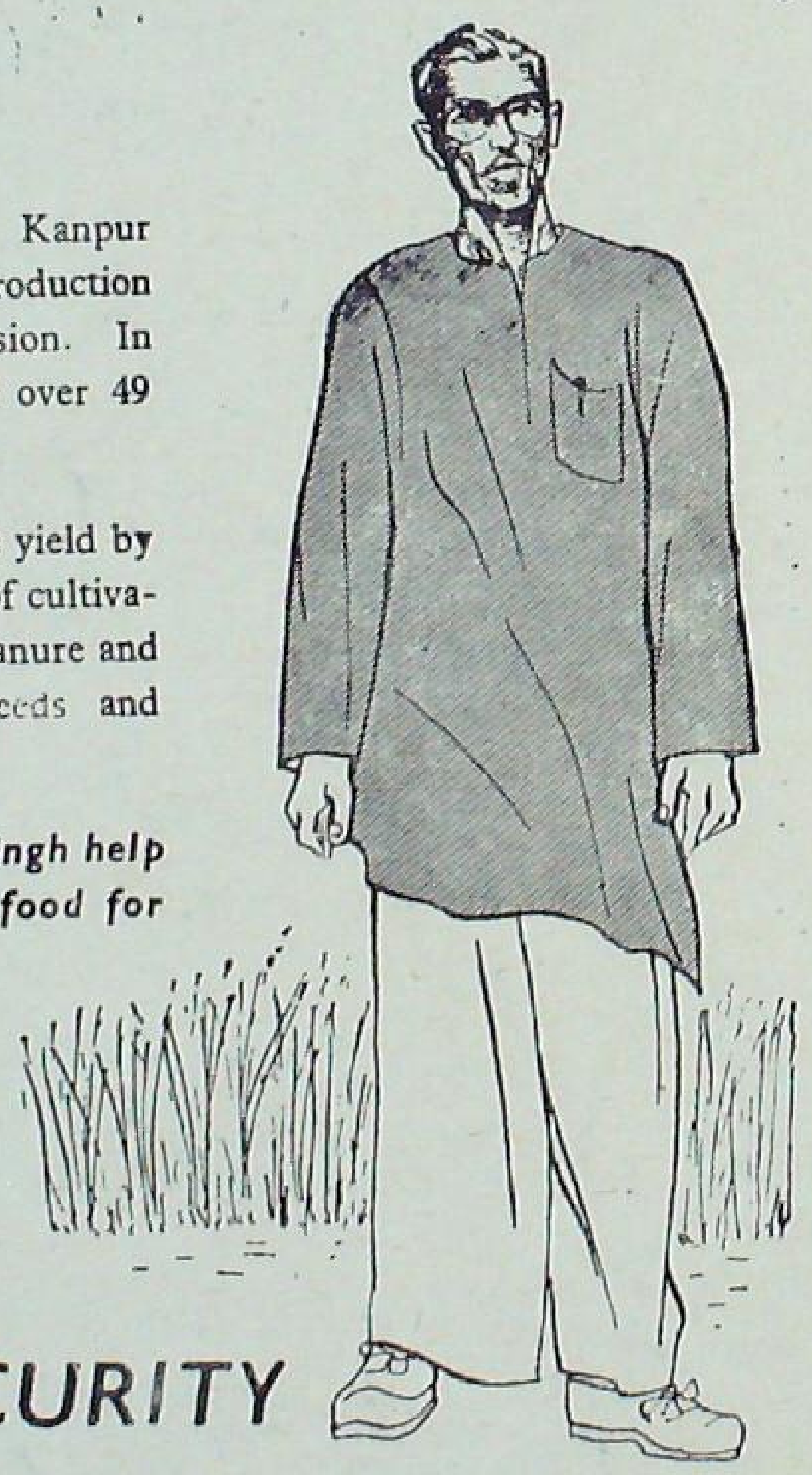
BUILDERS OF NEW INDIA



increasing the yield from the land



Randheer Singh of Mancha village in Kanpur District has won the Uttar Pradesh food production competition for the second time in succession. In 1958-59, he was able to make his land yield over 49 maunds of wheat per acre.

Randheer Singh has been able to raise the yield by systematically applying improved methods of cultivation-intensive ploughing, use of organic manure and chemical fertilizers, sowing of better seeds and adequate irrigation.

Progressive cultivators like Randheer Singh help build a new India by providing more food for the nation.

THE PLAN MEANS PLENTY AND SECURITY

Work for it-Save for it

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